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North Central Forest Experiment Station

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Timber Resource of Wisconsin's Southwest Survey Unit, 1983

Gerhard K. Raile

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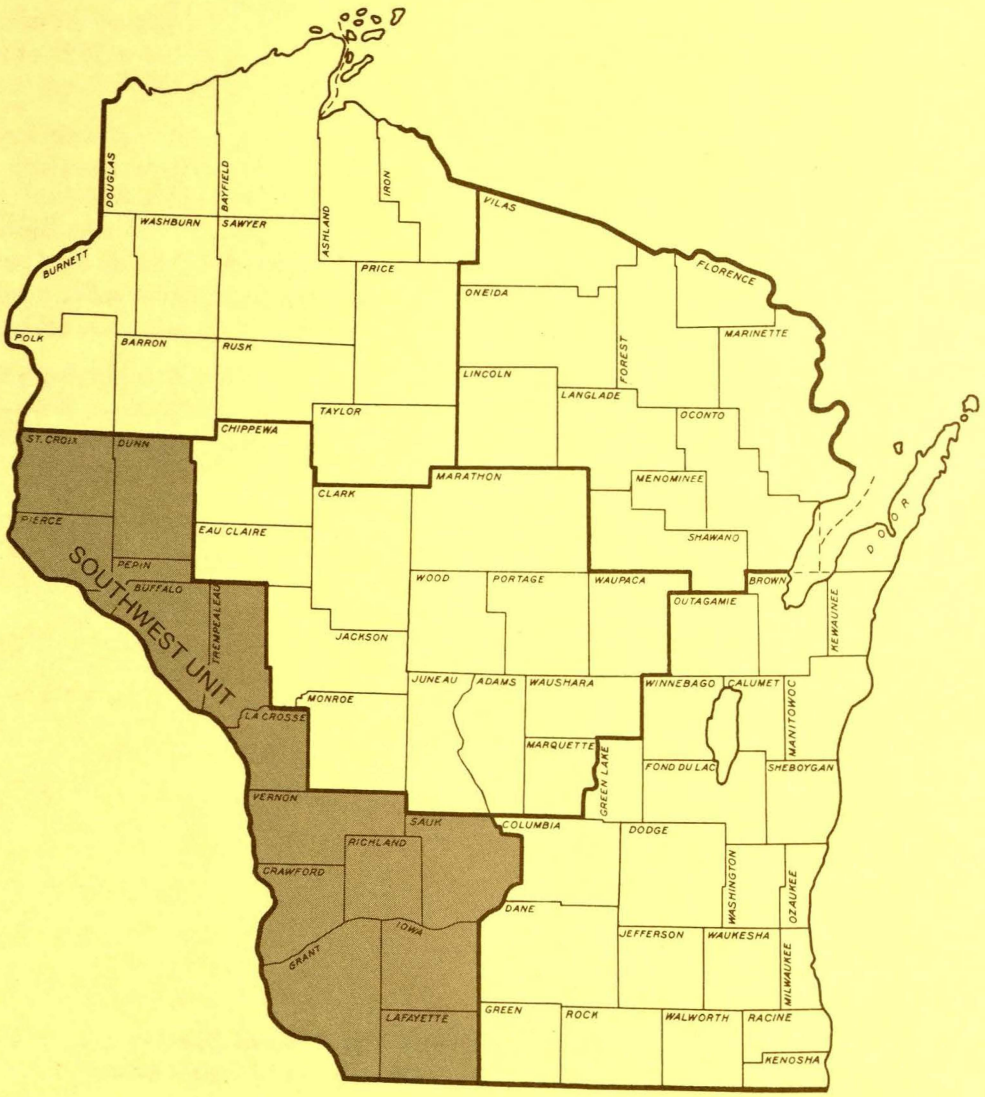

Information contained in this report includes the most commonly used Forest Inventory and Analysis statistics. However, additional forest resource data can be provided to interested users. Persons requesting additional information that can be provided from the raw inventory data are expected to pay for the retrieval costs. These costs will vary depending on the complexity of the request, from less than $100 for a relatively simple request to $2,000 for a complex retrieval involving the services of a Forest Inventory and Analysis computer programmer. If requests for data conflict with ongoing Forest Inventory and Analysis work, they will be scheduled so as to minimize the impact on the work unit.

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FOREWORD

Forest Inventory and Analysis (FIA) is a continuing endeavor as mandated by the Renewable Forest and Rangeland Resources Planning Act of 1974. Prior inventories were mandated by the McSweeney-McNary Forest Research Act of 1928. The objective of FIA is to periodically inventory the Nation's forest land to determine its extent, condition, and volume of timber, growth, and depletions. Up-to-date resource information is essential to frame intelligent forest policies and programs. USDA Forest Service regional experiment stations are responsible for conducting these inventories and publishing summary reports for individual States. The North Central Forest Experiment Station is responsible for forest resource evaluation in Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, and Wisconsin.

Fieldwork for the Wisconsin Statewide forest inventory was begun in the summer of 1981 and completed in late 1983. Reports on the three previous inventories of Wisconsin's timber resource are dated 1936, 1956, and 1968.

More accurate survey information was obtained during the 1983 survey than otherwise would have been feasible because of intensified field sampling. Such sampling was made possible by additional funding and field personnel provided the North Central Station by the Wisconsin State Legislature through the Department of Natural Resources. Data from the Department's canvass of all primary wood-using plants in the State were used to help estimate the quantity of timber products harvested in Wisconsin.

Aerial photos used in the Southwest Unit Forest Inventory were furnished by the Wisconsin Department of Natural Resources and the USDA Agricultural Stabilization and Conservation Service.

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TIMBER RESOURCE OF WISCONSIN'S SOUTHWEST SURVEY UNIT, 1983

Gerhard K. Raile, *Mensurationist*

HIGHLIGHTS

Forest Area

- Forest land accounted for 2.0 million acres (32 percent of the Unit's land area) in 1983; this constitutes a 30-percent increase since 1968.
- Commercial forest land occupied 1.9 million acres in 1983--an increase of 29 percent from the 1.5 million acres in 1968.
- Productive-reserved forest land totaled 38,800 acres in 1983, compared to 12,300 acres in 1968.
- Vernon County contained the largest area of commercial forest in 1983 (200,300 acres), a 44-percent increase from 139,300 acres in 1968. Land changing from wooded pasture to commercial forest caused this increase.
- Farmers and miscellaneous private individuals hold 91 percent of the commercial forest.
- State and Federal agencies owned 3 percent of commercial forest in 1983.
- The oak-hickory forest type continued to dominate the commercial forest land base in 1983, comprising 55 percent of the commercial forest area.
- Sapling and seedling stands, which increased 152,300 acres between surveys, occupied 20 percent of the commercial forest in 1983 as compared to 16 percent in 1968.
- Sawtimber stands, which increased by 271,100 acres between surveys, amounted to 56 percent of the commercial forest in 1983, compared to 54 percent in 1968.
- Sixty-two percent (34,800 acres) of the commercial plantation area is in the red pine type.
- Only 6 percent of all commercial forest area has a prominent conifer understory.
- Less than 2 percent of all forest land is reserved.
- The average site index for commercial forest land in the Unit is 66 feet at age 50.

Timber Volume

- The volume of growing stock in 1983 was 1.9 billion cubic feet, 56 percent greater than the 1.2 billion in 1968.
- Sawtimber volume amounted to 6.0 billion board feet in 1983, 77 percent greater than the 1968 volume.
- The 1.8 billion cubic feet of hardwoods make up 95 percent of the growing-stock volume.
- Red pine growing-stock volume increased 812 percent since 1968. Ingrowth of plantations to merchantable size was the dominant factor in this dramatic increase.
- Sixty-two percent of the growing-stock volume is accounted for by the oaks (857 million cubic feet), maples (208 million cubic feet), and basswood (125 million cubic feet).
- Average growing-stock volume per acre in 1983 was 1,008 cubic feet, compared to 831 cubic feet in 1968.
- Nearly 60 percent of the sawtimber volume is in trees with grade 3 butt logs. Tree diameter is generally the limiting criteria.
- The volume in cull trees (rough, rotten, and short-log cull) is 508 million cubic feet; salvable dead tree volume is 35 million cubic feet.

Stand Conditions

- Net annual growth on growing-stock trees was 50 million cubic feet in 1982.
- The net annual growth rate of growing stock was 2.6 percent of inventory in 1982.
- Net growth averaged 26.2 cubic feet per acre in 1982.
- Annual mortality of growing stock amounted to 17 million cubic feet (0.9 percent of inventory) in 1982.
- Disease accounted for 34 percent of the mortality in 1982; chiefly diseases of elm.

Timber Use

- Timber removals from growing stock in 1981 totaled nearly 30.6 million cubic feet (1.6 percent of inventory), compared to 29.9 million cubic feet (2.4 percent of inventory) in 1967.
- The oaks made up 64 percent of the 1981 removals volume and account for 44 percent of the growing-stock volume.
- Output of roundwood products totaled 49.9 million cubic feet in 1981; 51 percent was fuelwood, 39 percent was saw logs, 4 percent was pulpwood, and 6

percent was other.

- Wood residue from primary plants totaled 9.2 million cubic feet in 1981, 99 percent of which was used.

Biomass

- Highest yields per acre of live tree biomass are in the oak-hickory (84 green tons) the red pine (79 tons), and the birch (75 tons) forest types.
- Live tree biomass totaled 143 million green tons (74 tons per acre) in 1983, with just under half in the boles of growing-stock trees.

APPENDIX

ACCURACY OF SURVEY

Forest Inventory and Analysis information is based on a sampling procedure designed to provide reliable statistics at the State and Unit levels. Consequently, the reported figures are estimates only. A measure of reliability of these figures is given by sampling errors. These sampling errors mean that the chances are two out of three that the true inventory value is within the limits indicated. For example, the estimated growing-stock volume in the Southwest Unit in 1983, 1,935.7 million cubic feet, has a sampling error of ± 3.7 percent (71.6 million cubic feet). Therefore, the growing-stock volume from a 100-percent inventory would have a two in three chance of falling between 1,864.1 and 2,007.3 million cubic feet.

The following tabulation shows the sampling errors for the 1983 Southwest Unit Forest Inventory:

Item	Unit totals	Sampling error
Growing stock	(Million cubic feet)	(Percent)
Volume	1,936	3.7
Growth	50	5.7
Removals	31	39.4
Sawtimber	(Million board feet[1])	
Volume	6,039	4.2
Growth	183	5.3
Removals	124	30.4
Commercial forest land	(Thousand acres) 1,920.0	0.39

As survey data are broken down into sections smaller than Survey Unit totals, the sampling error increases. For example, the sampling error for growing-stock volume in a particular county is higher than that for total growing-stock volume in the Unit (table 66 shows the sampling errors for estimates smaller than Unit totals).

SURVEY PROCEDURES

We used a two-phase sampling design for the 1983 Wisconsin survey. This sampling scheme and associated estimators are similar to sampling with partial replacement (SPR) in that a set of randomly located plots was available for remeasurement and a set of new randomly located plots was established and measured. Major enhancements in the new Wisconsin design were stratification for disturbance on the old sample and use of a growth model to improve regression estimates made on the old undisturbed forest plots. The growth model used was the Stand and Tree Evaluation and Modeling System (STEMS).[2]

The major steps in the new survey design were as follows:

1. The first phase of the survey was to interpret aerial photos. In this phase two sets of random points were located on current aerial photographs. The first was a set of new photo points and the second was a set of relocated old photo points (ground plot locations from the previous inventory). In all, 35,628 1-acre points, including old ground sample locations, were systematically distributed across aerial photos of the entire Unit. These points were classified into land classes as shown below to make a preliminary estimate of forest area. Next, 12,802 of these points were stereoclassified as to stand-size class and density. Finally, 2,455 points were examined on the ground to correct the preliminary area estimate for errors in classification and for actual changes in land use since the photos were taken.

Land class	Photo points classified	Photo points stereo-classified	Inventory plots checked
Forest land	11,675	11,675	722
Unproductive/reserved forest land	216	216	26
Nonforest land	22,974	911	1,656
Water	763	0	51
Total	35,628	12,802	2,455

[1] *International ¼-inch rule.*

[2] *For more information on STEMS, see: Belcher, D. L.; Holdaway, M. R.; Brand, G. J. A description of STEMS: The stand and tree evaluation and modeling system. Gen. Tech. Rep. NC-79. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station; 1981, 18 p.*

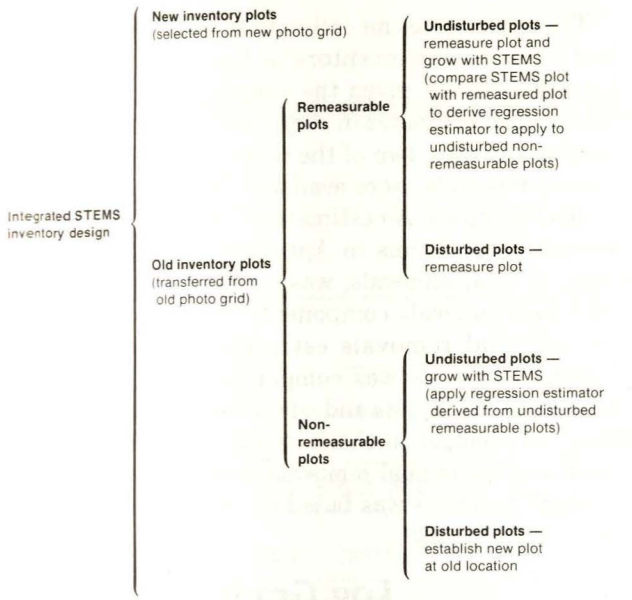
Integrated STEMS inventory design
New inventory plots (selected from new photo grid)
Old inventory plots (transferred from old photo grid)
Remeasurable plots
Non-remeasurable plots
Undisturbed plots — remeasure plot and grow with STEMS (compare STEMS plot with remeasured plot to derive regression estimator to apply to undisturbed non-remeasurable plots)
Disturbed plots — remeasure plot
Undisturbed plots — grow with STEMS (apply regression estimator derived from undisturbed remeasurable plots)
Disturbed plots — establish new plot at old location

Figure 1.--*Logic structure for the 1983 Wisconsin sample design.*

2. The second phase of the survey was to sample ground plots. The plot selection and measurement procedures of phase two of the new Wisconsin survey design are outlined in figure 1.

From the new photo points, a random sample of ground plots was established; and land use, volume, mortality, and cutting were recorded. At each forest ground plot location, variable-radius plots (basal area factor 37.5) were established at 10 points uniformly placed over the sample acre. These locations were monumented for future remeasurement.

On the old inventory photo points (old plot locations), we used a somewhat different procedure. Old plots were either remeasurable (monumented) or nonremeasurable (not monumented and thus difficult to relocate). Within both of these groups, old plots were additionally identified as undisturbed or disturbed. The remeasurable old inventory photo points which are classified as forest undisturbed were remeasured on the ground to obtain current land use, volume, growth, and removals data. Additionally, all forest undisturbed remeasurable plots were projected to the current time using STEMS to provide estimates of current volume and growth. The comparison of the projected and observed values on these plots provided regression estimators to adjust the projected values of the undisturbed nonremeasurable plots. All disturbed remeasurable plots were remeasured on the ground to assess changes since the last inventory.

Disturbance as used here refers to any change on a plot that can be detected on aerial photos and that the STEMS growth processor cannot predict, such as catastrophic mortality, cutting, seedling stands, and land use change.

The nonremeasurable forest points are those that were measured but not monumented during the 1968 inventory. STEMS updated these old undisturbed plots, producing an estimate of current data. Thus these points became ground plots even though the information was obtained without actually visiting the plot. For points classified as disturbed, a new ground plot was established as close to the old location as possible. This allowed information about land use trends to be recorded even though the old plot could not be exactly relocated for remeasurement.

The estimation procedure for computing statistics from this sampling design was more complicated than the simple two-phase estimation procedure used in the past. In fact, this procedure yielded two independent samples, one coming from the new photo points and the other coming from the old photo points that were remeasured or projected. A more detailed description of the sampling design is available in a separate publication.[3]

3. Statistics on timber utilization during 1981 were obtained from mill surveys. The Wisconsin Department of Natural Resources canvassed resident sawmills, veneer mills, and other primary wood-using plants. The North Central Forest Experiment Station canvassed out-of-State sawmills, pulpmills, and veneer mills to determine their use of Wisconsin timber. Fuelwood and fencepost output was based on a sample of public and private landowners to determine their production of fuelwood and fenceposts. Estimates of primary mill residue used for fuelwood were obtained from the canvass of Wisconsin primary wood-using plants.

4. We measured a total of 2,568 felled trees on 133 active logging operations throughout the State during 1981-1982 to develop wood utilization factors for converting timber products output to timber removals for saw logs and pulpwood. Factors for all other products were obtained during the 1966-1967 Wisconsin utilization study.

5. Field data were sent to St. Paul, Minnesota, to be processed and analyzed.

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[3]*Hahn, J. T.; Hansen, M. H.; Fairweather, S. E. A Sampling procedure incorporating a growth simulator. St. Paul, MN: U.S. Department of Agriculture, Forest Service, North Central Forest Experiment Station; (Manuscript in process).*

COMPARING WISCONSIN'S FOURTH INVENTORY WITH THE THIRD INVENTORY

Data from new forest inventories are often compared with data from earlier inventories to determine trends in forest resources. However, changes in procedures and definitions between surveys often make it necessary to adjust earlier survey data so that they are comparable to data from the new survey. A consistency check was made for the Unit to ensure that the changes observed between inventories reflect actual changes in the resource and not changes in definitions or procedures.

Between the 1968 and 1983 inventories of Southwest Wisconsin, a procedural change was made in the method of deriving annual growth and mortality estimates. Growth and mortality figures for the 1968 inventory were based on field estimates from nonremeasurement plots. Information gathered on remeasurement plots during the current inventory was used to adjust the STEMS estimate of growth and mortality.

Checking for Consistency

A test was made to ensure that it was possible to move from the 1968 resource statistics to the 1983 values by means of Timber Resource Analysis System (TRAS), a USDA Forest Service computer program for updating, backdating, and projecting timber volume, growth, mortality, and removals. Using growth rates, mortality rates, and removals rates for the period between the two surveys, TRAS projected the inventory from 1968 to 1983. The program prints out volumes by diameter class for softwoods and hardwoods for selected years in the period. Thus, any inconsistencies in volume, growth, mortality, and removals could be identified. No adjustment of the 1968 inventory was needed.

TRAS generates an estimate of what total removals had to be for the inventory to have changed as it did between surveys, given the volume, growth, and mortality data. Estimates of removals for products and for logging residues, two of the three components of total timber removals, were available from an independent utilization study. An estimate of "other" removals (see Definition of Terms in Appendix), the third component of total removals, was made by subtracting the first two removals components from the TRAS-generated total removals estimate. This estimate of "other" removals was compared with findings from remeasurement plots and new plots (stump counts and land use change) to check its validity. Total removals were average annual removals because the estimate of "other" removals was based on a removals trend line from 1968 to 1983.

Log Grade

In Wisconsin's Southwest Unit the butt log of every sawtimber tree on every full permanent sample plot was graded for quality.

Butt logs were graded on the basis of external characteristics as indicators of quality. Hardwood species were graded according to "Hardwood Log Grades for Standard Lumber."[4] The best 12-foot section of the lowest 16-foot hardwood log, or the best 12-foot upper section if the butt log did not meet minimum log-grade standards, was graded as follows:

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[4] *Vaughn, C. L.; Wollin, C. A.; McDonald, K. A.; Bulgrin, E. H. Hardwood log grades for standard lumber. Res. Pap. FPL-63. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory; 1966. 52 p.*

Forest Service standard grades for hardwood factory saw logs

Grading factors		Specifications							
		Log grade 1			Log grade 2				Log grade 3
Position in tree		Butts only	Butts and uppers		Butts and uppers				Butts and uppers
Scaling diameter, inches		[1]13-15	16-19	20+	[2]11+		12+		8+
Length without trim, feet			10+		10+	8-9	10-11	12+	8+
Required clear cuttings[3] of each of three best faces[4]	Min. length, feet	7	5	3	3	3	3	3	2
	Max. number	2	2	2	2	2	2	3	No Limit
	Min. proportion of log length required in clear cutting	5/6	5/6	5/6	2/3	3/4	2/3	2/3	1/2
Maximum sweep and crook allowance	For logs with less than one-fourth of end in sound defects		15 percent			30 percent			50 percent
	For logs with more than one-fourth of end in sound defects		10 percent			20 percent			35 percent
Maximum scaling deduction			40 percent[5]			50 percent[6]			50 percent

[1]Ash and basswood butts can be 12 inches if they otherwise meet requirements for small #1's.
[2]Ten-inch logs of all species can be #2 if they otherwise meet requirements for small #1's.
[3]A clear cutting is a portion of a face, extending the width of the face, that is free of defects.
[4]A face is one-fourth of the surface of the log as divided lengthwise.
[5]Otherwise #1 logs with 41-60 percent deductions can be #2.
[6]Otherwise #2 logs with 51-60 percent deductions can be #3.

Forest Service standard specifications for hardwood construction logs (tie and timber logs)[1]

Position in tree		Butt and upper
Min. diameter, small end		8 inches +
Min. length, without trim		8 feet
Clear cuttings		No requirements.
Sweep allowance, absolute		One-fourth of the diameter at the small end for each 8 feet of length.
Sound surface defects	Single knots	Any number, if no one knot has an average diameter above the callus in excess of one-third of the log diameter at point of occurrence.
	Whorled knots	Any number if sum of knot diameters above the callus does not exceed one-third of the log diameter at point of occurrence.
	Holes	Any number provided none has a diameter over one-third of the log diameter at point of occurrence, and none extends more than 3 inches into included timber.[2]
Unsound surface defects		Same requirements as for sound defects if they extend into included timber.[2] No limit if they do not.
End defects	Sound	No requirements.
	Unsound	None allowed; log must be sound internally, but will admit one shake not to exceed one-fourth the scaling diameter and will admit a longitudinal split not extending more than 5 inches into the contained timber.

[1]These specifications are minimum for the class. If, from a group of logs, factory logs are selected first, thus leaving only nonfactory logs from which to select construction logs, then the quality range of the construction logs so selected is limited, and the class may be considered a grade. If selection for construction logs is given first priority, it may be necessary to subdivide the class into grades.

[2]Included timber is always square, and dimension is judged from small end.

Softwood species were graded according to the following specifications on the following page.

Log Grades for Eastern White Pine

Log grade	Minimum size Diameter	Minimum size Length[1]	Sweep or crook allowance	Total cull allowance including sweep	Maximum weevil injury	Allowable knot size (inches)[2] on three best faces or minimum clearness of four faces
	Inches	*Feet*	*--------Percent--------*		*Number*	*Inches*
1	12 & 13	8-16	20	50	0	Four faces clear full length
	14+	10-16	20	50	0	Two faces clear full length, or four faces clear 50 percent length (6 feet min. length)[3]
2	6+	8-16	30	50	0	Sound knots l.e.[4] D/6 and less than 3 inches[5] Unsound knots: l.e. 1½ inches and for: butt, lots l.e. D/12 upper logs l.e. D/10 or four faces clear 50 percent of length
3	6+	8-16	40	50	8-foot logs 1 weevil 10-foot+ logs: 2 weevil	Sound knots l.e. D/3 and less than 5 inches. Unsound knots l.e.D/6 and less than 2½ inches.
4	6+	8-16	50	50	No limit	No limit

[1]Plus trim.
[2]Disregard all knots less than ½-inch diameter in all grades.
[3]The sum of the diameter of sound knots plus twice the sum of the diameter of unsound knots (in inches) is less than or equal to ½ of the diameter of the log (inches).
[4]l.e. means less than or equal to.
[5]D means d.i.b. of log at location of knot.

LOG GRADES FOR JACK PINE AND RED PINE

Grade 1: logs with three or four clear faces.[5]

Grade 2: logs with one or two clear faces.

Grade 3: logs with no clear faces.

After the tentative log grade is established from above, the log will be degraded one grade for each of the following, except that no log can be degraded below grade 3. Net scale after deduction for defect must be at least 50 percent of the gross contents of the log.

1. *Sweep.* Degrade any tentative 1 or 2 log one grade if sweep amounts to 3 or more inches and equals or exceeds one-third the diameter inside bark at small end.

2. *Heart rot.* Degrade any tentative 1 or 2 log grade if conk, massed hyphae, or other evidence of advance heart rot is found anywhere in it.

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[5]*A face is one-fourth of the circumference in width extending full length of the log. Clear faces are those free of: knots measuring more than ½ inches in diameter, overgrown knots of any size, and holes more than ¼ inches in diameter. Faces may be rotated to obtain the maximum number of clear ones.*

LOG GRADES FOR ALL OTHER SOFTWOOD LOGS

Grade 1

1. Logs must be 16 inches in diameter or larger, 10 feet or longer, and with deduction for defect not more than 30 percent of gross scale.

2. Logs must be at least 75 percent clear on each of three faces.

3. All knots outside clear cutting must be sound and not over 2½-inches in size.

Grade 2

1. Logs must be 12 inches in diameter or larger, 10 feet or longer, and with a net scale after deduction for defect of at least 50 percent of the gross contents of the log.

2. Logs must be at least 50 percent clear on each of three faces or 75 percent clear on two faces.

Grade 3

1. Lots must be 6 inches in diameter or larger, 8 feet or longer, and with a net scale after deduction for defect or at least 50 percent of the gross contents of the log.

Note: (A) Diameters are diameter inside bark (d.o.b.) at small end of log.
(B) Percent clear refers to percent clear in one continuous section.

TREE SPECIES GROUPS IN WISCONSIN[6]

SOFTWOODS
- Jack pine ..... *Pinus banksiana*
- Red pine ..... *Pinus resinosa*
- Eastern white pine ..... *Pinus strobus*
- White spruce ..... *Picea glauca*
- Black spruce ..... *Picea mariana*
- Balsam fir ..... *Abies balsamea*
- Eastern hemlock ..... *Tsuga canadensis*
- Tamarack ..... *Larix laricina*
- Eastern redcedar ..... *Juniperus virginiana*
- Northern white-cedar ..... *Thuja occidentalis*
- Other softwoods
  - Norway spruce ..... *Picea abies*
  - Scotch pine ..... *Pinus sylvestris*

HARDWOODS
- White oaks
  - White oak ..... *Quercus alba*
  - Swamp white oak ..... *Quercus bicolor*
  - Bur oak ..... *Quercus macrocarpa*
  - Chinkapin oak ..... *Quercus muehlenbergii*
- Select red oak
  - Northern red oak ..... *Quercus rubra*
- Other red oaks
  - Northern pin oak ..... *Quercus ellipsoidalis*
  - Black oak ..... *Quercus velutina*
- Select hickory
  - Shagbark hickory ..... *Carya ovata*
- Other hickory
  - Bitternut hickory ..... *Carya cordiformis*
- Yellow birch ..... *Betula alleghaniensis*
- Hard maple
  - Sugar maple ..... *Acer saccharum*
  - Black maple ..... *Acer nigrum*
- Soft maples
  - Red maple ..... *Acer rubrum*
  - Silver maple ..... *Acer saccharinum*
- Ashes
  - White ash ..... *Fraxinus americana*
  - Black ash ..... *Fraxinus nigra*
  - Green ash ..... *Fraxinus pennsylvanica*
- Balsam poplar ..... *Populus balsamifera*
- Eastern cottonwood ..... *Populus deltoides*
- Sycamore ..... *Platanus occidentalis*
- Aspens
  - Bigtooth aspen ..... *Populus grandidentata*
  - Quaking aspen ..... *Populus tremuloides*
- American basswood ..... *Tilia americana*
- Beech ..... *Fagus grandifolia*
- Black walnut ..... *Juglans nigra*
- Black cherry ..... *Prunus serotina*
- Butternut ..... *Juglans cinerea*
- Elms
  - American elm ..... *Ulmus americana*
  - Slippery elm ..... *Ulmus rubra*
  - Rock elm ..... *Ulmus thomasii*
- Hackberry ..... *Celtis occidentalis*
- Paper birch ..... *Betula papyrifera*
- Black willow ..... *Salix nigra*
- Other hardwoods
  - Boxelder ..... *Acer negundo*
  - Black locust ..... *Robinia pseudoacacia*
  - Honeylocust ..... *Gleditsia triacanthos*
  - River birch ..... *Betula nigra*
  - Red mulberry ..... *Morus rubra*
  - Blackgum ..... *Nyssa silvatica*
  - Northern catalpa ..... *Catalpa speciosa*
- Noncommercial species
  - Mountain maple ..... *Acer spicatum*
  - Eastern hophornbeam ..... *Ostrya virginiana*
  - Peachleaf willow ..... *Salix amygdaloides*
  - American hornbeam ..... *Carpinus caroliniana*
  - Hawthorn ..... *Crataegus* spp.
  - Striped maple ..... *Acer pennsylvanicum*
  - Mountain ash ..... *Sorbus* spp.
  - Pin cherry ..... *Prunus pennsylvanica*
  - Chokecherry ..... *Prunus virginiana*

[6]*The common and scientific names are based on: Little, Elbert L. Check list of native and naturalized trees of the United States. Agric. Handb. 541. Washington, DC: U.S. Department of Agriculture, Forest Service; 1979. 375 p.*

METRIC EQUIVALENTS OF UNITS USED IN THIS REPORT

1 acre = 4,046.86 square meters or 0.405 hectare.
1,000 acres = 405 hectares.
1 cubic foot = 0.0283 cubic meter.
1 foot = 30.48 centimeters or 0.3048 meter.
1 inch = 25.4 millimeters, 2.54 centimeters, or 0.0254 meter.
1 pound = 0.454 kilogram.
1 ton = 0.907 metric ton.

DEFINITION OF TERMS

Acceptable trees.--*Growing-stock trees* of commercial species that meet specified standards of size and quality. These trees would be favored by forest managers.

Basal area.--The area in square feet of the cross section at breast height of a single tree. When the basal area of all trees in a stand are summed, the result

is usually expressed as square feet of basal area per acre.

Biomass.--The above-ground volume of all live trees (including bark and foliage). Biomass is made up of 5 components:

Growing-stock bole.--Biomass of a growing-stock tree from a 1-foot stump to a variable 4-inch top.

Growing-stock tops and limbs.--Biomass of a growing-stock tree from a 1-foot stump minus the growing-stock bole.

Cull bole.--Biomass of a cull tree from a 1-foot stump to a variable 4-inch top.

Cull tops and limbs.--Biomass of a cull tree from a 1-foot stump minus the cull hole.

1- to 5-inch trees.--Biomass of all live trees from 1 to 5 inches in diameter at breast height.

Commercial forest land.--Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization. (Note: Areas qualifying as commercial forest land are capable of producing more than 20 cubic feet per acre per year of annual growth when managed. Currently inaccessible and inoperable areas are included except when the areas involved are small and unlikely to become suitable for producing industrial wood in the foreseeable future.)

Commercial species.--Trees species presently or prospectively suitable for industrial wood products. (Note: Excludes species of typically small size, poor form, or inferior quality such as hophornbeam and hawthorn.)

County and municipal land.--Land owned by counties and local public agencies or municipalities, or land leased to these governmental units for 50 years or more.

Cull.--Portions of a tree that are unusable for industrial wood products because of rot, form, or other defect.

Diameter classes.--A classification of trees based on diameter outside bark, measured at breast height (4-½ feet above the ground). (Note: D.b.h. is the common abbreviation for diameter at breast height. Two-inch diameter classes are commonly used in Forest Survey, with the even inch the approximate midpoint for a class. For example, the 6-inch class includes trees 5.0 through 6.9 inches d.b.h.)

Farm.--Any land from which $1,000 or more of agricultural products were produced and sold during the year.

Farmer-owned land.--Land owned by farm operators. (Note: Excludes land leased by farm operators from nonfarm owners, such as railroad companies and States.)

Forest land.--Land at least 16.7 percent stocked by forest trees of any size, or formerly having had such tree cover, and not currently developed for nonforest use. (Note: Stocking is measured by comparing specified standards with basal area and/or number of trees, age or size, and spacing.) The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width of at least 120 feet to qualify as forest land. Unimproved roads and trails, streams, or other bodies of water or clearings in forest areas shall be classed as forest if less than 120 feet wide. Also see definitions for land area, commercial forest land, noncommercial forest land, productive-reserved forest land, stocking, unproductive forest land, and water.

Forest industry land.--Land owned by companies or individuals operating primary wood-using plants.

Forest trees.--Woody plants having a well-developed stem and usually more than 12 feet tall at maturity.

Forest type.--A classification of forest land based on the species forming a plurality of live tree stocking. Major forest types in the State are:

Jack pine.--Forests in which jack pine comprises a plurality of the stocking. (Common associates include eastern white pine, red pine, aspen, birch, and oak.)

Red pine.--Forests in which red pine comprises a plurality of the stocking. (Common associates include eastern white pine, jack pine, aspen, birch, and oak.)

White pine.--Forests in which eastern white pine comprises a plurality of the stocking. (Common associates include red pine, aspen, birch, and maple.)

Balsam fir.--Forests in which balsam fir and white spruce comprise a plurality of stocking with balsam fir the most common. (Common associates include white spruce, aspen, maple, birch, northern white-cedar, and spruce.)

White spruce.--Forests in which white spruce and balsam fir comprise a plurality of the stocking with white spruce the most common. (Common associates include balsam fir, aspen, maple, birch, and northern white-cedar.)

Black spruce.--Forests in which swamp conifers comprise a plurality of the stocking with black spruce the most common. (Common associates include tamarack, northern white-cedar, and balsam fir.)

Northern white-cedar.--Forests in which swamp conifers comprise a plurality of the stocking with northern white-cedar the most common. (Common associates include balsam fir, black ash, spruce, and black spruce.)

Tamarack.--Forests in which swamp conifers comprise a plurality of the stocking with tamarack the most common. (Common associates include black spruce, balsam fir, and aspen.)

Oak-hickory.--Forests in which northern red oak,

bur oak, or hickories, singly or in combination, comprise a plurality of the stocking. (Common associates include jack pine, aspen, birch, and maple.)

Elm-ash-soft maple.--Forests in which lowland elm, ash, cottonwood, and red maple, singly or in combination, comprise a plurality of the stocking. (Common associates include aspen, birch, and balsam fir.)

Maple-birch.--Forests in which sugar maple, basswood, yellow birch, elm, and red maple, singly or in combination, comprise a plurality of the stocking. (Common associates include white pine, elm, hemlock, and basswood.)

Aspen.--Forests in which quaking aspen or bigtooth aspen, singly or in combination, comprise a plurality of the stocking. (Common associates include oak, pine, balsam fir, and paper birch.)

Paper birch.--Forests in which paper birch comprises a plurality of the stocking. (Common associates include maple, aspen, and balsam fir.)

Exotic.--Forests in which species not native to the State comprise a plurality of the stocking. (Mostly Scotch pine plantations.)

Gross area.--The entire area of land and water as determined by the Bureau of the Census, 1970.

Growing-stock trees.--Live trees of commercial species, excluding rough and rotten trees.

Growing-stock volume.--Net volume in cubic feet of growing-stock trees 5 inches d.b.h. and over, from a 1-foot stump to a minimum 4 inch top diameter outside bark of the central stem or to the point where the central stem breaks into limbs. Cubic feet can be converted to standard cords by dividing by 79. One standard cord is 128 cubic feet of stacked wood, including bark and air.

Hardwoods.--Dicotyledonous trees, usually broad-leaved and deciduous.

Idle farmland.--Includes former cropland, orchards, improved pastures, and farm sites not tended within the past 2 years and presently less than 16.7 percent stocked with trees.

Improved pasture.--Land currently improved for grazing by cultivating, seeding, irrigating, or clearing of trees or brush and less than 16.7 percent stocked with live trees.

Land area.--A. *Bureau of the Census.* The area of dry land and land temporarily or partly covered by water such as marshes, swamps, and river flood plains (omitting tidal flats below mean high tide); streams, sloughs, estuaries, and canals less than one-eighth of a statute mile wide; and lakes, reservoirs, and ponds less than 40 acres in area.

B. *Forest Inventory and Analysis.* The same as the Bureau of the Census, except minimum width of streams, etc., is 120 feet and minimum size of lakes, etc., is 1 acre.

Live trees.--Growing-stock, rough, and rotten trees 1 inch d.b.h. and larger.

Log grades.--A classification of logs based on external characteristics as indicators of quality or value. (See Appendix for specific grading factors used.)

Logging residues.--The unused growing stock portions of trees cut or killed by logging.

Maintained road.--Any road, hard-topped or other surfaces, that is plowed or graded at least once a year. Includes right-of-way that are cut or treated to limit herbaceous growth.

Marsh.--Nonforest land that characteristically supports low, generally herbaceous or shrubby vegetation and that is intermittently covered with water.

Merchantable.--Refers to a pulpwood or saw log section that meets pulpwood or saw log specifications, respectively.

Miscellaneous federal land.--Federal land other than National Forest, land administered by the Bureau of Land Management, and Indian land.

Miscellaneous private land.--Privately owned land other than forest-industry and farmer-owned land.

Mortality.--The volume of sound wood in growing-stock and sawtimber trees that die annually.

National Forest land.--Federal land that has been legally designated as National Forest or purchase units, and other land administered by the USDA Forest Service.

Net annual growth of growing stock.--The annual change in volume of sound wood in live sawtimber and poletimber trees and the total volume of trees entering these classes through ingrowth, less volume losses resulting from natural causes.

Net annual growth of sawtimber.--The annual change in the volume of live sawtimber trees and the total volume of trees reaching sawtimber size, less volume losses resulting from natural causes.

Net volume.--Gross volume less deductions for rot, sweep, or other defect affecting use for timber products.

Noncommercial forest land.--(a) Unproductive forest land and (b) productive-reserved forest land.

Noncommercial species.--Tree species of typically small size, poor form, or inferior quality that normally do not develop into trees suitable for industrial wood products.

Nonforest land.--Land that has never supported forests, and land formerly forested where use for timber management is precluded by development for other uses. (Note: Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining clearings, powerline clearings of any width, and 1- to 40-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120

feet wide and more than 1 acre in area to quality as nonforest land.)

a. *Nonforest land without trees.*--Nonforest land with no live trees present.

b. *Nonforest land with trees.*--Nonforest land with one or more trees per acre at least 5 inches d.b.h.

Nonstocked land.--Commercial forest land less than 16.7 percent stocked with growing-stock trees.

Other removals.--Growing-stock trees removed but not utilized for products, or trees left standing but "removed" from the commercial forest land classification by land use change. Examples are removals from cultural operations such as timber stand improvement work, land clearing, and changes in land use.

Ownership.--Property owned by one owner, regardless of the number of parcels in a specified area.

Ownership size class.--The amount of commercial forest land owned by one owner, regardless of the number of parcels.

Owner tenure.--The length of time a property has been held by the owner.

Physiographic class.--A measure of soil and water conditions that affect tree growth on a site. The physiographic classes are:

Xeric sites.--Very dry soils where excessive drainage seriously limits both growth and species occurrence. Example: sandy jack pine plains.

Xeromesic sites.--Moderately dry soils where excessive drainage limits growth and species occurrence to some extent. Example: dry oak ridge.

Mesic sites.--Deep, well-drained soils. Growth and species occurrence are limited only by climate.

Hydromesic sites.--Moderately wet soils where insufficient drainage or infrequent flooding limits growth and species occurrence to some extent. Example: better drained bottomland hardwood sites.

Hydric sites.--Very wet sites where excess water seriously limits both growth and species occurrence. Example: frequently flooded river bottoms and spruce bogs.

Plant byproducts.--Plant residues used for products such as mulch, pulp chips, and fuelwood.

Plant residues.--Wood and bark materials generated at manufacturing plants during production of other products.

Poletimber stands.--(See stand-size class.)

Poletimber trees.--Growing-stock trees of commercial species at least 5 inches d.b.h. but smaller than sawtimber size.

Productive-reserved forest land.--Forest land sufficiently productive to qualify as commercial forest land but withdrawn from timber utilization through statute, administration regulation, designation, or exclusive use for Christmas tree production, as indicated by annual shearing.

Productive-deferred.--Forest land sufficiently productive to quality as commercial forest land but presently withdrawn from timber utilization because it is being considered for possible inclusion into the Wilderness system.

Rotten trees.--Live trees of commercial species that do not contain at least one 12-foot saw log or two saw logs 8 feet or longer, now or prospectively, because they do not meet regional specifications for freedom from defect primarily because of rot; that is, when more than 50 percent of extra cull volume in a tree is rotten.

Rough trees.--(a) Live trees of commercial species that do not contain at least one merchantable 12-foot saw log or two saw logs 8 feet or longer, now or prospectively, because they do not meet regional specifications for freedom from defect primarily because of roughness or poor form, and (b) all live trees of noncommercial species.

Roundwood products.--Logs, bolts, or other round sections (including chips from roundwood) cut from trees for industrial or consumer uses. (Note: Includes saw logs, veneer logs and bolts; cooperage logs and bolts; pulpwood; fuelwood; piling; poles; posts; hewn ties; mine timbers; and various other round, split, or hewn products.)

Salvable dead trees.--Standing or down dead trees considered merchantable by regional standards.

Saplings.--Live trees 1 to 5 inches d.b.h.

Sapling-seeding stands.--(See stand-size class.)

Saw log.--A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight and with a minimum diameter outside bark (d.o.b.) for softwoods of 7 inches (9 inches for hardwoods) or other combinations of size and defect specified by regional standards.

Saw log portion.--That part of the bole of sawtimber trees between the stump and the saw log top.

Saw log top.--The point on the bole of sawtimber trees above which a saw log cannot be produced. The minimum saw log top is 7 inches d.o.b. for softwoods and 9 inches d.o.b. for hardwoods.

Sawtimber stands.--(See stand-size class.)

Sawtimber trees.--Growing-stock trees of commercial species containing at least a 12-foot saw log or two noncontiguous saw logs 8 feet or longer, and meeting regional specifications for freedom from defect. Softwoods must be at least 9 inches d.b.h. Hardwoods must be at least 11 inches d.b.h.

Sawtimber volume.--Net volume of the saw log portion of live sawtimber in board feet, International ¼-inch rule, from stump to a minimum 7 inches top diameter outside bark (d.o.b.) for softwoods and a minimum 9 inches top d.o.b. for hardwoods.

Seedlings.--Live trees less than 1 inch d.b.h. that are expected to survive. Only softwood seedlings more than 6 inches tall and hardwood seedlings more than 1 foot tall are counted.

Short-log (rough tree).--Sawtimber-size trees of commercial species that contain at least one merchantable 8- to 11-foot saw log but not a 12-foot saw log.

Site class.--A classification of forest land in terms of inherent capacity to grow crops of industrial wood based on fully stocked natural stands.

Site index.--An expression of forest site quality based on the height of a free-growing dominant or codominant tree of a representative species in the forest type at age 50.

Softwoods.--Coniferous trees, usually evergreen, having needles or scale-like leaves.

Stand.--A growth of trees on a minimum of 1 acre of forest land that is stocked by forest trees of any size.

Stand-age class.--Age of the main stand. Main stand refers to trees of the dominant forest type and stand-size class.

Stand-area class.--The extent of a continuous forested area of the same forest type, stand-size class, and stand-density class.

Stand-size class.--A classification of forest land based on the size class of growing-stock trees on the area; that is, sawtimber, poletimber, or seedlings and saplings.

a. *Sawtimber stands*.--Stands at least 16.7 percent stocked with growing-stock trees, with half or more of total stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

b. *Poletimber stands*.--Stands at least 16.7 percent stocked with growing-stock trees of which half or more of this stocking is in poletimber and/or sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

c. *Sapling-seedling stands*.--Stands at least 16.7 percent stocked with growing-stock trees of which more than half of the stocking is saplings and/or seedlings.

d. *Nonstocked stands*.--Stands in which stocking of growing-stock trees is less than 16.7 percent.

State land.--Land owned either by States or leased to them, for 50 years or more.

Stocking.--The degree of occupancy of land by trees, measured by basal area and/or the number of trees in a stand by size or age and spacing, compared to the basal area and/or number of trees required to fully utilize the growth potential of the land; that is, the stocking standard.

A stocking percent of 100 indicates full utilization of the site and is equivalent to 80 square feet of basal area per acre in trees 5 inches d.b.h. and larger. In a stand of trees less than 5 inches d.b.h., a stocking percent of 100 would indicate that the present number of trees is sufficient to produce 80 square feet of basal area per acre when the trees reach 5 inches d.b.h.

Stands are grouped into the following stocking classes:

Overstocked stands.--Stands in which stocking of trees is 134.0 percent or more.

Fully stocked stands.--Stands in which stocking of trees is from 101.0 to 133.9 percent.

Medium stocked stands.--Stands in which stocking of trees is from 61.0 to 100.9 percent.

Poorly stocked stands.--Stands in which stocking of trees is from 16.7 to 60.9 percent.

Nonstocked areas.--Commercial forest land on which stocking of trees is less than 16.7 percent.

Timber removals from growing stock.--The volume of sound wood in growing-stock trees removed annually for forest products (including roundwood products and logging residues) and for other removals.

Timber removals from sawtimber.--The net board-foot volume of live sawtimber trees removed for forest products annually (including roundwood products and logging residues) and for other removals.

Timber products output.--All timber products cut from roundwood and byproducts of wood manufacturing plants. Roundwood products include logs, bolts, or other round sections cut from growing-stock trees, cull trees, salvable dead trees, trees on nonforest land, noncommercial species, sapling-size trees, and limbwood. Byproducts from primary manufacturing plants include slabs, edging, trimmings, miscuts, sawdust, shavings, veneer cores and clippings, and screenings of pulpmills that are used as pulpwood chips or other products.

Tree biomass.--The total aboveground weight (including the bark) of all trees from 1 to 5 inches d.b.h., and the total aboveground weight (including the bark) from a 1-foot stump for trees more than 5 inches in diameter.

Tree size class.--A classification of trees based on diameter at breast height, including sawtimber trees, poletimber trees, saplings, and seedlings.

Unproductive forest land.--Forest land incapable of producing 20 cubic feet per acre of annual growth or of yielding crops of industrial wood under natural conditions because of adverse site conditions. (Note: Adverse conditions include shallow soil, dry climate, poor drainage, high elevation, steepness, and rockiness).

Upper stem portion.--That part of the bole of sawtimber trees above the saw log top to a minimum top diameter of 4 inches outside bark or to the point

where the central stem breaks into limbs.

Urban **and other areas**.--Areas within the legal boundaries of cities and towns; suburban areas developed for residential, industrial, or recreational purposes; schoolyards; cemeteries, roads; railroads; airports; beaches; powerlines; and other rights-of-way; or other nonforest land not included in any other specified land use class.

Water.--(a) *Bureau of the Census*.--Permanent inland water surfaces, such as lakes, reservoirs, and ponds at least 40 acres in area; and streams, sloughs, estuaries, and canals at least one-eighth of a statute mile wide.

(b) *Noncensus*.--Permanent inland water surfaces, such as lakes, reservoirs, and ponds from 1 to 39.9 acres in area; and streams, sloughs, estuaries, and canals from 120 feet to one-eighth of a statute mile wide.

Wooded pasture.--Improved pasture with more than 16.7 percent stocking in live trees but less than 25 percent stocking in growing-stock trees. Area is currently improved for grazing or there is other evidence of grazing.

Wooded strip.--An acre or more of natural continuous forest land that would otherwise meet survey standards for commercial forest land except that it is less than 120 feet wide.

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Table 1.--Area of land by land class, Southwest Unit, Wisconsin, 1968 and 1983

(In thousand acres)

Land class	1968	1983
Forest land		
Commercial forest land		
Jack pine	21.8	11.2
Red pine	23.4	40.1
White pine	2.6	13.7
Balsam fir	--	--
White spruce	--	2.5
Black spruce	--	--
Northern white-cedar	--	--
Tamarack	--	--
Oak-hickory	867.9	1,063.4
Elm-ash-soft maple	93.7	117.8
Maple-birch	324.9	497.9
Aspen	75.0	85.7
Paper birch	34.7	54.4
Nonstocked	49.1	33.3
Subtotal	1,493.1	1,920.0
Noncommercial forest land		
Unproductive	7.0	--
Productive-reserved	12.3	38.8
Subtotal	19.3	38.8
Total	1,512.4	1,958.8
Nonforest land		
Cropland	2,935.5	2,902.6
Pasture and range	743.3	712.5
Other	987.9	576.6
Total	4,666.7	4,191.7
Total land	6,179.1	6,150.5
Water (Bureau of the Census)	123.6[1/]	136.6[2/]
Total land and water	6,302.7[1/]	6,287.1[2/]

[1/] U.S. Department of Commerce, Bureau of Census, 1960.

[2/] U.S. Department of Commerce, Bureau of Census, 1980.

Table 2.--Area of land by land use class and county, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Land use class	All counties	County							
		Buffalo	Crawford	Dunn	Grant	Iowa	La Crosse	Lafayette	Pepin
Forest land									
Commercial forest	1,920.0	187.9	167.8	170.0	184.5	136.0	121.6	37.6	53.4
Unproductive forest	--	--	--	--	--	--	--	--	--
Productive reserved	38.8	5.5	1.0	1.1	1.9	4.7	--	0.6	0.5
Total	1,958.8	193.4	168.8	171.1	186.4	140.7	121.6	38.2	53.9
Nonforest land									
Nonforest with trees									
Cropland with trees	7.4	--	--	--	--	--	--	2.6	--
Improved pasture with trees	115.9	--	--	2.4	9.1	31.2	--	26.0	--
Wooded strips	10.2	2.7	--	--	--	2.6	--	2.3	--
Idle farmland with trees	12.5	--	--	2.4	--	2.7	--	2.4	--
Marsh with trees	12.7	2.8	--	5.0	--	--	--	--	--
Urban and other windbreaks	8.7	--	--	2.6	--	--	1.2	--	--
Windbreaks	12.2	--	--	--	--	--	--	--	--
Wooded pasture	47.4	--	2.8	2.6	21.2	10.6	--	4.7	--
Subtotal	227.0	5.5	2.8	15.0	30.3	47.1	1.2	38.0	--
Nonforest without trees									
Cropland without trees	2,895.2	225.7	148.0	265.4	415.8	235.1	113.9	226.7	62.7
Improved pasture without trees	549.2	5.2	7.5	41.3	72.3	43.2	--	95.3	19.2
Idle farm without trees	20.5	--	--	--	--	7.7	--	--	--
Marsh without trees	55.1	2.5	5.0	9.9	--	--	13.3	--	4.8
Other farm-farmstead	66.0	2.5	2.5	2.4	7.5	--	--	2.6	2.4
Urban and other	372.1	12.8	27.5	41.1	19.9	12.7	42.6	5.1	4.8
Noncensus water	6.6	--	--	--	--	--	--	--	--
Subtotal	3,964.7	248.7	190.5	360.1	515.5	298.7	169.8	329.7	93.9
Total	4,191.7	254.2	193.3	375.1	545.8	345.8	171.0	367.7	93.9
Total land	6,150.5	447.6	362.1	546.2	732.2	486.5	292.6	405.9	147.8
Water (Bureau of the Census)[1/]	136.6	6.6	20.7	6.5	23.8	4.1	14.8	11.1	11.1
Total land and water[1/]	6,287.1	454.2	382.8	552.7	756.0	490.6	307.4	417.0	158.9

[1/] U.S. Department of Commerce, Bureau of Census, 1980.

(Table 2 continued on next page)

(Table 2 continued)

Land use class	County					
	Pierce	Richland	St. Croix	Sauk	Trempealeau	Vernon
Forest land						
Commercial forest	100.6	158.7	72.9	181.7	147.0	200.3
Unproductive forest	--	--	--	--	--	--
Productive reserved	1.5	0.7	4.8	10.3	4.1	2.1
Total	102.1	159.4	77.7	192.0	151.1	202.4
Nonforest land						
Nonforest with trees						
Cropland with trees	--	--	--	4.8	--	--
Improved pasture with trees	9.7	2.2	4.9	7.3	18.1	5.0
Wooded strips	--	--	--	--	2.6	--
Idle farmland with trees	--	--	--	2.5	--	2.5
Marsh with trees	2.4	--	--	--	--	2.5
Urban and other windbreaks	4.9	--	--	--	--	--
Windbreaks	4.9	--	--	4.8	2.5	--
Wooded pasture	--	2.8	--	--	2.7	--
Subtotal	21.9	5.0	4.9	19.4	25.9	10.0
Nonforest without trees						
Cropland without trees	181.8	149.3	285.7	219.0	184.1	182.0
Improved pasture without trees	24.4	38.2	27.3	34.0	61.3	80.0
Idle farm without trees	2.4	--	7.9	2.5	--	--
Marsh without trees	2.4	2.2	2.5	4.9	7.6	--
Other farm-farmstead	9.7	6.8	7.4	14.5	5.2	2.5
Urban and other	24.3	13.2	46.7	48.3	33.1	40.0
Noncensus water	--	--	2.4	1.6	2.6	--
Subtotal	245.0	209.7	379.9	324.8	293.9	304.5
Total	266.9	214.7	384.8	344.2	319.8	314.5
Total land	369.0	374.1	462.5	536.2	470.9	516.9
Water (Bureau of the Census)[1/]	9.7	3.8	8.5	6.7	3.9	5.3
Total land and water[1/]	378.7	377.9	471.0	542.9	474.8	522.2

[1/] U.S. Department of Commerce, Bureau of Census, 1980.

Table 3.--Area of commercial forest land by ownership class and county, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Species group	All owners	Ownership class								
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Buffalo	187.9	--	--	5.6	--	--	--	149.4	8.3	24.6
Crawford	167.8	--	8.4	--	--	--	--	81.1	8.4	69.9
Dunn	170.0	--	--	--	2.6	--	--	91.9	13.1	62.4
Grant	184.5	--	6.2	6.0	3.1	--	--	127.0	6.1	36.1
Iowa	136.0	--	--	8.2	--	--	--	84.4	16.2	27.2
La Crosse	121.6	--	3.3	6.6	--	--	--	69.5	9.9	32.3
Lafayette	37.6	--	--	--	--	--	--	28.2	--	9.4
Pepin	53.4	--	--	2.8	--	--	--	42.1	--	8.5
Pierce	100.6	--	--	--	2.7	--	--	89.7	--	8.2
Richland	158.7	--	--	--	--	--	--	103.0	13.9	41.8
St. Croix	72.9	--	--	5.6	--	--	--	31.0	5.7	30.6
Sauk	181.7	--	--	--	2.5	--	--	111.9	5.0	62.3
Trempealeau	147.0	--	--	--	--	--	--	118.2	--	28.8
Vernon	200.3	--	11.9	--	--	--	--	128.5	6.2	53.7
All counties	1,920.0	--	29.8	34.8	10.9	--	--	1,255.9	92.8	495.8

Table 4.--Area of commercial forest land by ownership class and site class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
National Forest	--	--	--	--	--	--	--
Miscellaneous federal	29.8	--	--	--	14.4	9.0	6.4
State	34.8	--	--	--	8.8	11.6	14.4
County and municipal	10.9	--	--	--	--	--	10.9
Indian	--	--	--	--	--	--	--
Forest industry	--	--	--	--	--	--	--
Farmer	1,255.9	--	--	42.8	299.8	534.2	379.1
Misc. private-corporation	92.8	--	--	--	24.0	40.3	28.5
Misc. private-individual	495.8	--	--	26.1	109.7	211.3	148.7
All owners	1,920.0	--	--	68.9	456.7	806.4	588.0

Table 5.--Area of commercial forest land by ownership class and stand-volume class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All classes	Stand-volume class (board feet[1/]) Less than 1,500	1,500 to 5,000	5,000+
National Forest	--	--	--	--
Miscellaneous federal	29.8	14.9	9.0	5.9
State	34.8	17.3	11.7	5.8
County and municipal	10.9	10.9	--	--
Indian	--	--	--	--
Forest industry	--	--	--	--
Farmer	1,255.9	407.4	586.8	261.7
Misc. private-corporation	92.8	32.4	57.3	3.1
Misc. private-individual	495.8	215.6	199.6	80.6
All owners	1,920.0	698.5	864.4	357.1

[1/] International 1/4-inch rule.

Table 6.--Area of privately owned commercial forest land by ownership class, owner tenure, and size of holding, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Ownership class and owner tenure class	All sizes	Size of holding (acres) 1-4	5-10	11-20	21-50	51-100	101-500	501-2,500	2,501-5,000	5001+
Forest industry										
1-4 years	--	--	--	--	--	--	--	--	--	--
5-9 years	--	--	--	--	--	--	--	--	--	--
10-19 years	--	--	--	--	--	--	--	--	--	--
20+ years	--	--	--	--	--	--	--	--	--	--
All classes	--	--	--	--	--	--	--	--	--	--
Farmer										
1-4 years	225.1	--	--	16.3	60.2	53.7	91.7	--	3.2	--
5-9 years	298.1	5.6	--	11.0	82.9	84.0	108.5	6.1	--	--
10-19 years	383.3	2.7	5.5	15.8	111.6	100.6	141.7	5.4	--	--
20+ years	349.4	5.4	14.1	7.4	79.0	123.4	120.1	--	--	--
All classes	1,255.9	13.7	19.6	50.5	333.7	361.7	462.0	11.5	3.2	--
Misc. priv.-corporation										
1-4 years	25.1	--	--	--	5.6	5.5	11.2	2.8	--	--
5-9 years	25.6	--	--	--	5.4	5.6	11.9	2.7	--	--
10-19 years	28.2	--	--	--	3.3	8.9	13.2	2.8	--	--
20+ years	13.9	--	--	--	2.7	--	8.5	2.7	--	--
All classes	92.8	--	--	--	17.0	20.0	44.8	11.0	--	--
Misc. priv.-individual										
1-4 years	132.8	--	6.0	17.1	49.2	29.3	28.2	3.0	--	--
5-9 years	136.9	--	12.8	2.6	48.6	33.5	39.4	--	--	--
10-19 years	160.8	2.4	5.3	16.9	41.2	36.7	49.6	8.7	--	--
20+ years	65.3	--	--	4.9	17.0	11.0	27.0	5.4	--	--
All classes	495.8	2.4	24.1	41.5	156.0	110.5	144.2	17.1	--	--
All private owners										
1-4 years	383.0	--	6.0	33.4	115.0	88.5	131.1	5.8	3.2	--
5-9 years	460.6	5.6	12.8	13.6	136.9	123.1	159.8	8.8	--	--
10-19 years	572.3	5.1	10.8	32.7	156.1	146.2	204.5	16.9	--	--
20+ years	428.6	5.4	14.1	12.3	98.7	134.4	155.6	8.1	--	--
All classes	1,844.5	16.1	43.7	92.0	506.7	492.2	651.0	39.6	3.2	--

Table 7.--Area of commercial forest land by forest type, stand-size class, and ownership class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type and stand-size class	All owners	Ownership class								
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Jack pine										
Sawtimber	5.9	--	--	--	--	--	--	5.9	--	--
Poletimber	2.5	--	--	--	2.5	--	--	--	--	--
Sapling & seedling	2.8	--	--	--	--	--	--	2.8	--	--
All stands	11.2	--	--	--	2.5	--	--	8.7	--	--
Red pine										
Sawtimber	3.3	--	--	--	--	--	--	3.3	--	--
Poletimber	26.2	--	--	--	--	--	--	8.1	2.6	15.5
Sapling & seedling	10.6	--	--	--	--	--	--	--	5.3	5.3
All stands	40.1	--	--	--	--	--	--	11.4	7.9	20.8
White pine										
Sawtimber	3.4	--	--	--	--	--	--	--	--	3.4
Poletimber	2.6	--	--	--	--	--	--	2.6	--	--
Sapling & seedling	7.7	--	2.5	--	--	--	--	2.6	--	2.6
All stands	13.7	--	2.5	--	--	--	--	5.2	--	6.0
Balsam fir										
Sawtimber	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--
White spruce										
Sawtimber	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	2.5	--	--	--	--	--	--	--	--	2.5
All stands	2.5	--	--	--	--	--	--	--	--	2.5
Black spruce										
Sawtimber	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--
Northern white-cedar										
Sawtimber	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--

(Table 7 continued on next page)

(Table 7 continued)

Forest type and stand-size class	All owners	Ownership class: National Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Tamarack										
Sawtimber	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--
Oak-hickory										
Sawtimber	732.6	--	--	9.0	--	--	--	527.0	31.7	164.9
Poletimber	187.7	--	--	--	--	--	--	118.3	13.7	55.7
Sapling & seedling	143.1	--	--	6.1	--	--	--	67.5	8.2	61.3
All stands	1,063.4	--	--	15.1	--	--	--	712.8	53.6	281.9
Elm-ash-soft maple										
Sawtimber	64.9	--	14.9	5.8	--	--	--	29.8	8.3	6.1
Poletimber	17.5	--	3.3	2.7	--	--	--	5.6	3.0	2.9
Sapling & seedling	35.4	--	2.8	5.6	2.6	--	--	16.0	--	8.4
All stands	117.8	--	21.0	14.1	2.6	--	--	51.4	11.3	17.4
Maple-birch										
Sawtimber	223.3	--	3.1	--	--	--	--	162.5	12.0	45.7
Poletimber	119.0	--	--	--	--	--	--	80.8	--	38.2
Sapling & seedling	155.6	--	--	2.8	5.8	--	--	104.3	2.8	39.9
All stands	497.9	--	3.1	2.8	5.8	--	--	347.6	14.8	123.8
Aspen										
Sawtimber	22.1	--	--	--	--	--	--	22.1	--	--
Poletimber	39.1	--	--	2.8	--	--	--	25.3	--	11.0
Sapling & seedling	24.5	--	--	--	--	--	--	11.4	2.5	10.6
All stands	85.7	--	--	2.8	--	--	--	58.8	2.5	21.6
Paper birch										
Sawtimber	18.9	--	--	--	--	--	--	16.3	--	2.6
Poletimber	27.3	--	--	--	--	--	--	19.4	2.7	5.2
Sapling & seedling	8.2	--	--	--	--	--	--	5.4	--	2.8
All stands	54.4	--	--	--	--	--	--	41.1	2.7	10.6
Exotic										
Sawtimber	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--
Nonstocked	33.3	--	3.2	--	--	--	--	18.9	--	11.2
All types										
Sawtimber	1,074.4	--	18.0	14.8	--	--	--	766.9	52.0	222.7
Poletimber	421.9	--	3.3	5.5	2.5	--	--	260.1	22.0	128.5
Sapling & seedling	390.4	--	5.3	14.5	8.4	--	--	210.0	18.8	133.4
Nonstocked	33.3	--	3.2	--	--	--	--	18.9	--	11.2
All stands	1,920.0	--	29.8	34.8	10.9	--	--	1,255.9	92.8	495.8

Table 8.--Area of commercial forest land by forest type and county, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All counties	County							
		Buffalo	Crawford	Dunn	Grant	Iowa	La Crosse	Lafayette	Pepin
Jack pine	11.2	--	--	2.6	--	--	3.3	--	2.8
Red pine	40.1	--	--	13.1	--	2.7	3.3	--	--
White pine	13.7	--	--	--	--	--	3.4	--	--
Balsam fir	--	--	--	--	--	--	--	--	--
White spruce	2.5	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--
Oak-hickory	1,063.4	121.8	103.5	78.6	124.0	100.9	79.3	21.2	25.3
Elm-ash-soft maple	117.8	13.8	19.6	10.4	12.2	8.3	6.6	--	8.4
Maple-birch	497.9	13.8	33.5	52.3	42.2	16.0	13.2	16.4	11.3
Aspen	85.7	16.6	--	7.8	6.1	2.7	9.2	--	2.8
Paper birch	54.4	19.1	5.6	5.2	--	2.7	3.3	--	2.8
Exotic	--	--	--	--	--	--	--	--	--
Nonstocked	33.3	2.8	5.6	--	--	2.7	--	--	--
All types	1,920.0	187.9	167.8	170.0	184.5	136.0	121.6	37.6	53.4

(Table 8 continued)

(Table 8 continued)

Forest type	County					
	Pierce	Richland	St.Croix	Sauk	Trempealeau	Vernon
Jack pine	--	--	--	2.5	--	--
Red pine	--	--	8.1	5.0	7.9	--
White pine	--	--	--	--	7.8	2.5
Balsam fir	--	--	--	--	--	--
White spruce	--	--	2.5	--	--	--
Black spruce	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--
Oak-hickory	24.8	61.4	19.9	104.5	78.8	119.4
Elm-ash-soft maple	5.5	5.5	11.3	2.5	10.6	3.1
Maple-birch	56.9	89.0	5.7	57.2	18.3	72.1
Aspen	8.2	2.8	16.8	7.5	5.2	--
Paper birch	--	--	--	--	15.7	--
Exotic	--	--	--	--	--	--
Nonstocked	5.2	--	8.6	2.5	2.7	3.2
All types	100.6	158.7	72.9	181.7	147.0	200.3

Table 9.--Area of commercial forest land by county and stand-size class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

County	All stands	Stand-size class			
		Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Buffalo	187.9	127.1	38.5	19.5	2.8
Crawford	167.8	98.0	30.7	33.5	5.6
Dunn	170.0	75.9	57.6	36.5	--
Grant	184.5	133.2	30.1	21.2	--
Iowa	136.0	65.5	38.1	29.7	2.7
La Crosse	121.6	86.0	19.9	15.7	--
Lafayette	37.6	23.5	2.4	11.7	--
Pepin	53.4	30.9	11.2	11.3	--
Pierce	100.6	46.7	21.8	26.9	5.2
Richland	158.7	75.1	36.2	47.4	--
St. Croix	72.9	11.2	31.4	21.7	8.6
Sauk	181.7	74.5	42.4	62.3	2.5
Trempealeau	147.0	76.2	36.6	31.5	2.7
Vernon	200.3	150.6	25.0	21.5	3.2
All counties	1,920.0	1,074.4	421.9	390.4	33.3

Table 10.--Area of commercial forest land by forest type, stand-size class, and site class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type and stand-size class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
Jack pine							
Sawtimber	5.9	--	--	--	--	--	5.9
Poletimber	2.5	--	--	--	--	--	2.5
Sapling & seedling	2.8	--	--	--	--	2.8	--
All stands	11.2	--	--	--	--	2.8	8.4
Red pine							
Sawtimber	3.3	--	--	3.3	--	--	--
Poletimber	26.2	--	--	18.4	7.8	--	--
Sapling & seedling	10.6	--	--	2.9	5.3	2.4	--
All stands	40.1	--	--	24.6	13.1	2.4	--
White pine							
Sawtimber	3.4	--	--	--	3.4	--	--
Poletimber	2.6	--	--	2.6	--	--	--
Sapling & seedling	7.7	--	--	--	5.1	2.6	--
All stands	13.7	--	--	2.6	8.5	2.6	--
Balsam fir							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
White spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	2.5	--	--	--	--	2.5	--
All stands	2.5	--	--	--	--	2.5	--
Black spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Northern white-cedar							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--

(Table 10 continued on next page)

(Table 10 continued)

Forest type and stand-size class	All classes	Site class (cubic feet of growth per acre per year)					
		225+	165-224	120-164	85-119	50-84	20-49
Tamarack							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Oak-hickory							
Sawtimber	732.6	--	--	5.6	147.2	365.8	214.0
Poletimber	187.7	--	--	--	53.2	86.8	47.7
Sapling & seedling	143.1	--	--	2.5	29.8	69.8	41.0
All stands	1,063.4	--	--	8.1	230.2	522.4	302.7
Elm-ash-soft maple							
Sawtimber	64.9	--	--	--	14.0	28.3	22.6
Poletimber	17.5	--	--	--	2.8	2.9	11.8
Sapling & seedling	35.4	--	--	--	5.1	8.4	21.9
All stands	117.8	--	--	--	21.9	39.6	56.3
Maple-birch							
Sawtimber	223.3	--	--	5.2	31.1	102.1	84.9
Poletimber	119.0	--	--	5.3	59.7	29.1	24.9
Sapling & seedling	155.6	--	--	9.0	26.1	56.5	64.0
All stands	497.9	--	--	19.5	116.9	187.7	173.8
Aspen							
Sawtimber	22.1	--	--	2.8	16.5	--	2.8
Poletimber	39.1	--	--	2.7	16.4	13.8	6.2
Sapling & seedling	24.5	--	--	2.5	14.0	2.8	5.2
All stands	85.7	--	--	8.0	46.9	16.6	14.2
Paper birch							
Sawtimber	18.9	--	--	2.8	2.7	10.7	2.7
Poletimber	27.3	--	--	3.3	5.2	8.0	10.8
Sapling & seedling	8.2	--	--	--	2.6	--	5.6
All stands	54.4	--	--	6.1	10.5	18.7	19.1
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Nonstocked	33.3	--	--	--	8.7	11.1	13.5
All types							
Sawtimber	1,074.4	--	--	19.7	214.9	506.9	332.9
Poletimber	421.9	--	--	32.3	145.1	140.6	103.9
Sapling & seedling	390.4	--	--	16.9	88.0	147.8	137.7
Nonstocked	33.3	--	--	--	8.7	11.1	13.5
All stands	1,920.0	--	--	68.9	456.7	806.4	588.0

Table 11.--Area of commercial forest land by forest type and stand-age class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All ages	Stand-age class (years) 1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	120-140	141+
Jack pine	11.2	2.8	--	--	2.6	5.8	--	--	--	--	--	--	--	--
Red pine	40.1	2.6	15.8	15.8	5.9	--	--	--	--	--	--	--	--	--
White pine	13.7	2.6	7.7	--	--	--	--	--	3.4	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White spruce	2.5	2.5	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oak-hickory	1,063.4	94.2	43.1	32.0	36.3	115.9	92.6	97.0	85.7	123.0	114.2	116.5	79.0	33.9
Elm-ash-soft maple	117.8	24.2	8.4	5.6	5.7	8.8	17.1	8.3	11.4	11.8	5.5	11.0	--	--
Maple-birch	497.9	77.6	52.6	47.4	43.7	29.2	46.9	18.9	17.7	31.1	50.5	53.7	17.3	11.3
Aspen	85.7	7.7	16.0	17.4	11.0	14.3	10.9	5.6	--	--	2.8	--	--	--
Paper birch	54.4	5.4	2.8	3.3	7.8	13.5	16.3	5.3	--	--	--	--	--	--
Exotic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	33.3	33.3	--	--	--	--	--	--	--	--	--	--	--	--
All types	1,920.0	252.9	146.4	121.5	113.0	187.5	183.8	135.1	118.2	165.9	173.0	181.2	96.3	45.2

Table 12.--Area of commercial forest land by forest type and site-index class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All classes	Site-index class (feet) 11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91+
Jack pine	11.2	--	--	--	2.5	8.7	--	--	--	--
Red pine	40.1	--	--	--	--	--	12.9	13.4	13.8	--
White pine	13.7	--	--	--	--	2.6	5.9	2.6	--	2.6
Balsam fir	--	--	--	--	--	--	--	--	--	--
White spruce	2.5	--	--	--	2.5	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--
Oak-hickory	1,063.4	--	--	35.6	148.7	272.0	257.9	217.5	89.9	41.8
Elm-ash-soft maple	117.8	--	--	5.3	5.6	25.1	37.1	22.8	13.2	8.7
Maple-birch	497.9	--	--	8.9	51.4	113.5	104.1	116.6	81.1	22.3
Aspen	85.7	--	--	2.7	11.5	2.8	8.2	33.1	19.4	8.0
Paper birch	54.4	--	--	--	--	13.8	10.5	13.5	10.5	6.1
Exotic	--	--	--	--	--	--	--	--	--	--
Nonstocked	33.3	--	--	5.5	2.5	5.5	5.7	8.6	2.8	2.7
All types	1,920.0	--	--	58.0	224.7	444.0	442.3	428.1	230.7	92.2

Table 13.--Area of commercial forest land by forest type, stand-size class, and basal-area class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine															
Sawtimber	5.9	--	--	--	--	--	--	--	--	2.6	--	--	3.3	--	--
Poletimber	2.5	--	--	--	--	--	--	--	--	--	--	--	2.5	--	--
Sapling & seedling	2.8	2.8	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	11.2	2.8	--	--	--	--	--	--	--	2.6	--	--	5.8	--	--
Red pine															
Sawtimber	3.3	--	--	--	--	--	--	--	--	--	--	--	--	3.3	--
Poletimber	26.2	--	--	--	--	--	--	--	2.6	7.7	--	--	5.4	2.7	7.8
Sapling & seedling	10.6	2.6	2.4	--	--	--	5.6	--	--	--	--	--	--	--	--
All stands	40.1	2.6	2.4	--	--	--	5.6	--	2.6	7.7	--	--	5.4	6.0	7.8
White pine															
Sawtimber	3.4	--	--	--	3.4	--	--	--	--	--	--	--	--	--	--
Poletimber	2.6	--	--	--	--	--	--	--	--	--	--	2.6	--	--	--
Sapling & seedling	7.7	2.6	5.1	--	--	--	--	--	--	--	--	--	--	--	--
All stands	13.7	2.6	5.1	--	3.4	--	--	--	--	--	--	2.6	--	--	--
Balsam fir															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White spruce															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	2.5	2.5	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	2.5	2.5	--	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

(Table 13 continued on next page)

(Table 13 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oak-hickory															
Sawtimber	732.6	--	--	8.8	10.7	25.8	44.8	48.8	89.1	112.5	83.8	173.8	101.7	30.2	2.6
Poletimber	187.7	--	--	--	3.1	2.6	11.8	19.9	19.4	27.6	25.3	50.2	19.6	5.4	2.8
Sapling & seedling	143.1	5.3	10.8	21.3	20.8	10.9	30.0	10.7	2.8	8.7	8.5	7.9	5.4	--	--
All stands	1,063.4	5.3	10.8	30.1	34.6	39.3	86.6	79.4	111.3	148.8	117.6	231.9	126.7	35.6	5.4
Elm-ash-soft maple															
Sawtimber	64.9	--	--	--	2.7	5.6	8.2	--	3.1	13.6	6.1	14.4	8.4	2.8	--
Poletimber	17.5	--	--	--	--	--	9.0	--	2.8	--	--	5.7	--	--	--
Sapling & seedling	35.4	--	8.3	10.9	5.2	5.5	2.7	--	--	--	--	--	2.8	--	--
All stands	117.8	--	8.3	10.9	7.9	11.1	19.9	--	5.9	13.6	6.1	20.1	11.2	2.8	--
Maple-birch															
Sawtimber	223.3	--	--	3.1	2.8	11.3	24.2	19.7	34.9	19.7	19.3	60.6	25.2	2.5	--
Poletimber	119.0	--	--	--	3.1	11.1	19.1	10.7	14.0	16.0	2.5	23.7	15.7	3.1	--
Sapling & seedling	155.6	10.0	37.8	29.8	19.0	31.3	17.4	7.5	2.8	--	--	--	--	--	--
All stands	497.9	10.0	37.8	32.9	24.9	53.7	60.7	37.9	51.7	35.7	21.8	84.3	40.9	5.6	--
Aspen															
Sawtimber	22.1	--	--	--	--	--	2.8	--	2.7	5.6	--	3.1	7.9	--	--
Poletimber	39.1	--	3.0	--	--	5.5	5.3	2.6	5.4	--	8.8	5.6	2.9	--	--
Sapling & seedling	24.5	5.3	--	--	5.8	10.6	2.8	--	--	--	--	--	--	--	--
All stands	85.7	5.3	3.0	--	5.8	16.1	10.9	2.6	8.1	5.6	8.8	8.7	10.8	--	--
Paper birch															
Sawtimber	18.9	--	--	--	--	--	2.6	5.3	2.8	5.4	--	--	--	--	2.8
Poletimber	27.3	--	--	--	--	6.1	--	--	5.3	2.6	2.7	2.6	8.0	--	--
Sapling & seedling	8.2	--	--	--	2.6	--	--	5.6	--	--	--	--	--	--	--
All stands	54.4	--	--	--	2.6	6.1	2.6	10.9	8.1	8.0	2.7	2.6	8.0	--	2.8
Exotic															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	33.3	11.3	--	5.6	--	--	5.6	2.5	5.6	--	--	2.7	--	--	--
All types															
Sawtimber	1,074.4	--	--	11.9	19.6	42.7	82.6	73.8	132.6	159.4	109.2	251.9	146.5	38.8	5.4
Poletimber	421.9	--	3.0	--	6.2	25.3	45.2	33.2	49.5	53.9	39.3	90.4	54.1	11.2	10.6
Sapling & seedling	390.4	31.1	64.4	62.0	53.4	58.3	58.5	23.8	5.6	8.7	8.5	7.9	8.2	--	--
Nonstocked	33.3	11.3	--	5.6	--	--	5.6	2.5	5.6	--	--	2.7	--	--	--
All stands	1,920.0	42.4	67.4	79.5	79.2	126.3	191.9	133.3	193.3	222.0	157.0	352.9	208.8	50.0	16.0

Table 14.--Area of commercial forest land by stocking class of growing-stock trees and stand-size class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Stocking class (percent)	All stands	Stand-size class			
		Sawtimber stands	Poletimber stands	Sapling and seedling stands	Nonstocked areas
Less than 16.7	33.3	--	--	--	33.3
16.7 to 60.9	592.9	347.1	101.4	144.4	--
61.0 to 100.9	920.4	514.6	218.5	187.3	--
101.0 to 133.9	342.6	197.8	88.6	56.2	--
134.0+	30.8	14.9	13.4	2.5	--
All classes	1,920.0	1,074.4	421.9	390.4	33.3

Table 15.--Area of commercial forest land in plantations by forest type and stand-age class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	5.1	--	--	--	2.6	2.5	--	--	--	--	--	--	--	--
Red pine	34.8	2.6	10.5	15.8	5.9	--	--	--	--	--	--	--	--	--
White pine	10.3	2.6	7.7	--	--	--	--	--	--	--	--	--	--	--
White spruce	2.5	2.5	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	3.2	3.2	--	--	--	--	--	--	--	--	--	--	--	--
All types	55.9	10.9	18.2	15.8	8.5	2.5	--	--	--	--	--	--	--	--

Table 16.--Area of commercial forest land with conifer understory by forest type and conifer understory species, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All species	Conifer understory species									
		White pine	Red pine	Jack pine	Balsam fir	White spruce	Black spruce	Hemlock	Northern white-cedar	Eastern redcedar	Other softwoods
Jack pine	5.3	2.5	--	2.8	--	--	--	--	--	--	--
Red pine	7.7	2.5	2.6	2.6	--	--	--	--	--	--	--
White pine	7.7	7.7	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--
White spruce	2.5	--	--	--	--	2.5	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--
Oak-hickory	48.9	11.5	2.6	--	--	--	--	--	--	34.8	--
Elm-ash-soft maple	--	--	--	--	--	--	--	--	--	--	--
Maple-birch	26.7	5.9	--	2.6	--	--	--	--	--	18.2	--
Aspen	5.0	2.5	--	--	--	--	--	--	--	2.5	--
Paper birch	2.8	--	--	--	--	--	--	--	--	2.8	--
Exotic	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	5.7	3.2	--	--	--	--	--	--	--	2.5	--
All types	112.3	35.8	5.2	8.0	--	2.5	--	--	--	60.8	--

Table 17.--Area of noncommercial forest land by ownership class, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Ownership class	All areas	Productive-reserved areas	Unproductive areas
National Forest	--	--	--
Miscellaneous federal	7.6	7.6	--
State	21.9	21.9	--
County and municipal	2.6	2.6	--
Indian	--	--	--
Forest industry	--	--	--
Farmer	2.3	2.3	--
Misc. private-corp.	4.4	4.4	--
Misc. private-indiv.	--	--	--
Total	38.8	38.8	--

Table 18.--Area of noncommercial forest land by forest type, Southwest Unit, Wisconsin, 1983

(In thousand acres)

Forest type	All areas	Productive-reserved areas	Unproductive areas
Jack pine	--	--	--
Red pine	--	--	--
White pine	--	--	--
Balsam fir	--	--	--
White spruce	--	--	--
Black spruce	--	--	--
Northern white-cedar	--	--	--
Tamarack	--	--	--
Oak-hickory	14.9	14.9	--
Elm-ash-soft maple	13.2	13.2	--
Maple-birch	6.2	6.2	--
Aspen	1.8	1.8	--
Paper birch	--	--	--
Exotic	2.7	2.7	--
Nonstocked	--	--	--
All types	38.8	38.8	--

Table 19.--Number of all live trees on commercial forest land by species group and diameter class, Southwest Unit, Wisconsin, 1983

(In thousand trees)

Species group	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods															
Jack pine	3,482	1,026	998	568	483	239	88	59	21	--	--	--	--	--	--
Red pine	19,474	4,065	2,317	7,482	4,568	773	204	35	8	6	11	5	--	--	--
White pine	10,556	5,633	2,912	961	615	104	210	23	24	16	13	13	32	--	--
White spruce	1,682	1,076	538	42	26	--	--	--	--	--	--	--	--	--	--
Black spruce	271	--	--	243	28	--	--	--	--	--	--	--	--	--	--
Balsam fir	22	--	--	--	22	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	5,384	4,132	301	747	115	57	21	11	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	40,871	15,932	7,066	10,043	5,857	1,173	523	128	53	22	24	18	32	--	--
Hardwoods															
White oak	66,813	18,689	11,310	9,561	7,475	6,232	5,213	3,260	2,304	1,127	711	411	419	95	6
Select red oak	46,968	14,251	7,339	4,819	3,042	3,913	3,490	3,272	2,539	1,686	1,054	640	773	148	2
Other red oak	29,898	6,540	4,564	3,303	4,291	2,615	2,993	2,060	1,586	922	387	201	366	67	3
Select hickory	38,582	22,336	4,830	4,208	3,246	1,954	1,162	516	236	59	28	4	3	--	--
Other hickory	45,240	28,345	8,134	6,243	1,650	491	271	61	19	20	6	--	--	--	--
Basswood	37,310	16,664	7,996	3,129	3,376	2,446	1,391	916	525	421	170	115	122	31	8
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	131	--	--	--	27	62	--	31	11	--	--	--	--	--	--
Hard maple	47,453	29,730	6,367	4,078	2,044	1,432	1,103	919	612	473	271	130	232	61	1
Soft maple	44,929	27,021	6,882	4,833	2,359	1,350	955	538	369	257	123	90	93	53	6
Elm	96,430	72,415	8,861	5,564	3,591	2,752	1,561	804	491	179	64	41	75	30	2
Black ash	6,969	3,584	1,406	829	508	305	201	44	53	17	18	--	4	--	--
White & green ash	29,317	21,240	2,954	1,883	1,273	762	449	321	260	110	11	16	38	--	--
Cottonwood	1,677	522	--	609	86	59	139	65	24	59	45	17	25	24	3
Willow	2,864	1,320	813	124	175	165	123	64	31	27	--	9	10	3	--
Hackberry	4,741	4,373	--	187	123	--	38	20	--	--	--	--	--	--	--
Balsam poplar	863	807	--	--	--	--	--	41	15	--	--	--	--	--	--
Bigtooth aspen	19,616	8,650	2,924	2,354	1,761	1,346	1,458	581	338	171	19	14	--	--	--
Quaking aspen	35,893	18,108	4,839	6,388	2,992	1,792	1,174	415	126	45	14	--	--	--	--
Paper birch	42,114	16,440	11,064	4,989	5,248	2,631	1,021	474	180	36	28	--	3	--	--
River birch	2,237	516	817	489	168	74	64	48	39	--	17	5	--	--	--
Black cherry	39,732	26,412	4,636	3,654	1,998	2,063	472	354	97	41	--	5	--	--	--
Black walnut	2,199	558	--	277	378	367	317	168	59	44	12	16	3	--	--
Butternut	8,305	3,657	554	1,200	1,295	658	428	248	200	32	12	10	9	2	--
Other hardwoods	26,798	17,035	5,043	2,339	1,109	368	457	258	107	36	22	4	20	--	--
Noncommercial species	136,065	99,309	27,609	7,524	1,425	121	52	25	--	--	--	--	--	--	--
Total	813,144	458,522	128,942	78,584	49,640	33,958	24,532	15,503	10,221	5,762	3,012	1,728	2,195	514	31
All species	854,015	474,454	136,008	88,627	55,497	35,131	25,055	15,631	10,274	5,784	3,036	1,746	2,227	514	31

Table 20.--Number of growing-stock trees on commercial forest land by species group and diameter class, Southwest Unit, Wisconsin, 1983

(In thousand trees)

Species group	All classes	Diameter class (inches at breast height) 1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods															
Jack pine	3,082	1,026	998	322	449	203	40	44	--	--	--	--	--	--	--
Red pine	19,316	4,065	2,317	7,408	4,484	773	204	35	8	6	11	5	--	--	--
White pine	10,108	5,373	2,912	892	496	104	210	23	24	16	13	13	32	--	--
White spruce	1,682	1,076	538	42	26	--	--	--	--	--	--	--	--	--	--
Black spruce	271	--	--	243	28	--	--	--	--	--	--	--	--	--	--
Balsam fir	22	--	--	--	22	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	3,611	2,992	--	593	--	15	--	11	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	38,092	14,532	6,765	9,500	5,505	1,095	454	113	32	22	24	18	32	--	--
Hardwoods															
White oak	52,588	18,162	8,086	7,262	5,263	4,340	3,917	2,238	1,590	772	449	252	219	34	4
Select red oak	41,227	13,681	6,536	4,122	2,673	2,943	2,923	2,808	2,076	1,496	847	479	569	72	2
Other red oak	22,978	6,540	3,660	2,221	3,446	1,573	1,950	1,360	1,088	542	259	119	191	29	--
Select hickory	35,669	22,090	4,235	3,400	2,778	1,486	988	437	169	51	28	4	3	--	--
Other hickory	43,844	28,345	7,261	6,105	1,344	470	221	61	11	20	6	--	--	--	--
Basswood	33,678	16,383	6,868	2,355	3,079	2,095	1,246	718	400	252	131	68	61	19	3
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	121	--	--	--	27	62	--	21	11	--	--	--	--	--	--
Hard maple	44,299	28,893	5,845	3,947	1,777	1,095	895	659	474	298	169	82	130	34	1
Soft maple	42,332	27,021	6,059	4,376	2,048	1,049	710	426	215	181	94	59	61	29	4
Elm	90,540	70,825	8,288	3,960	2,851	2,326	1,196	534	304	133	24	19	58	21	1
Black ash	6,785	3,584	1,406	829	451	221	182	28	53	17	10	--	4	--	--
White & green ash	27,996	20,682	2,678	1,830	1,095	683	435	266	202	80	6	16	23	--	--
Cottonwood	1,385	522	--	329	86	59	139	65	24	59	45	17	14	24	2
Willow	2,214	1,059	552	124	127	165	109	32	11	27	--	5	3	--	--
Hackberry	4,682	4,373	--	187	64	--	38	20	--	--	--	--	--	--	--
Balsam poplar	863	807	--	--	--	--	--	41	15	--	--	--	--	--	--
Bigtooth aspen	19,261	8,650	2,924	2,247	1,731	1,331	1,378	552	307	113	19	9	--	--	--
Quaking aspen	33,324	17,807	4,570	5,330	2,572	1,551	1,052	303	96	29	14	--	--	--	--
Paper birch	39,934	16,180	10,804	4,947	4,598	2,104	825	334	109	28	5	--	--	--	--
River birch	2,178	516	817	489	168	74	46	31	27	--	5	5	--	--	--
Black cherry	34,916	25,092	3,579	2,421	1,453	1,739	365	186	40	41	--	--	--	--	--
Black walnut	1,841	558	--	161	319	283	274	168	23	29	12	11	3	--	--
Butternut	5,752	3,049	554	583	698	371	240	140	101	8	--	--	6	2	--
Other hardwoods	21,473	14,580	4,451	1,186	845	163	124	93	--	9	22	--	--	--	--
Total	609,880	349,399	89,173	58,411	39,493	26,183	19,253	11,521	7,346	4,185	2,145	1,145	1,345	264	17
All species	647,972	363,931	95,938	67,911	44,998	27,278	19,707	11,634	7,378	4,207	2,169	1,163	1,377	264	17

Table 21.--Net volume of growing stock on commercial forest land by species group, Southwest Unit, Wisconsin, 1968 and 1983

(In thousand cubic feet)

Species group	1968	1983
Softwoods		
Jack pine	5,000	7,060
Red pine	7,400	67,514
White pine	8,800	14,305
White spruce	--	310
Black spruce	--	914
Balsam fir	--	194
Hemlock	--	--
Tamarack	100	--
Eastern redcedar	--	1,479
Northern white-cedar	--	--
Other softwoods	200	--
Total	21,500	91,776
Hardwoods		
White oak	161,500	278,311
Select red oak	308,000	403,571
Other red oak	122,200	175,245
Select hickory	46,300	74,011
Other hickory	17,300	40,083
Basswood	62,200	124,839
Beech	--	--
Yellow birch	1,000	1,263
Hard maple	65,400	116,869
Soft maple	65,800	91,605
Elm	112,500	88,963
Black ash	8,900	14,133
White and green ash	22,900	44,283
Cottonwood	9,800	18,288
Willow	4,700	6,822
Hackberry	700	1,635
Balsam poplar	300	1,466
Bigtooth aspen	70,000	87,754
Quaking aspen	66,100	79,237
Paper birch	38,800	91,251
River birch	5,100	5,940
Black cherry	13,100	47,829
Black walnut	4,900	16,233
Butternut	7,900	21,628
Other hardwoods	3,200	12,636
Total	1,218,600	1,843,895
All species	1,240,100	1,935,671

Table 22.--Net volume of all live trees on commercial forest land by species group and diameter class, Southwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods													
Jack pine	9,448	1,470	2,677	2,287	1,338	1,193	483	--	--	--	--	--	--
Red pine	68,175	27,766	27,585	7,553	2,907	853	294	296	606	315	--	--	--
White pine	14,713	1,563	2,111	963	2,865	546	917	704	830	881	3,333	--	--
White spruce	310	135	175	--	--	--	--	--	--	--	--	--	--
Black spruce	914	722	192	--	--	--	--	--	--	--	--	--	--
Balsam fir	194	--	194	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	2,668	1,419	455	438	196	160	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	96,422	33,075	33,389	11,241	7,306	2,752	1,694	1,000	1,436	1,196	3,333	--	--
Hardwoods													
White oak	389,068	19,880	33,161	48,343	63,789	56,246	52,962	34,223	26,691	18,702	25,190	8,815	1,066
Select red oak	474,928	15,595	18,012	36,907	50,911	68,558	70,196	61,257	47,689	34,246	54,864	16,151	542
Other red oak	257,885	7,367	21,463	23,117	40,199	37,943	40,787	29,885	16,701	10,022	24,000	6,110	291
Select hickory	87,606	15,039	19,041	17,745	16,031	10,010	6,227	1,920	1,184	212	197	--	--
Other hickory	42,929	22,301	9,676	4,637	3,709	1,269	379	705	253	--	--	--	--
Basswood	150,465	8,304	19,328	24,376	21,527	19,833	15,438	13,998	7,671	6,147	7,930	3,750	2,163
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	1,468	--	113	442	--	632	281	--	--	--	--	--	--
Hard maple	149,877	11,723	12,157	13,907	16,266	19,117	17,804	16,742	11,877	7,165	16,035	6,792	292
Soft maple	114,508	15,470	14,276	13,572	14,064	11,487	9,805	9,555	6,129	4,929	7,106	6,730	1,385
Elm	118,225	7,651	15,168	22,490	21,359	16,124	13,183	6,604	2,801	2,225	5,891	4,316	413
Black ash	15,835	3,225	3,040	2,996	2,800	823	1,420	614	718	--	199	--	--
White & green ash	50,255	5,563	7,269	8,357	6,966	6,767	7,404	3,933	606	924	2,466	--	--
Cottonwood	19,526	608	476	554	2,309	1,515	738	2,612	2,562	1,084	2,037	3,844	1,187
Willow	9,828	133	770	1,520	1,828	1,259	813	1,173	--	405	1,108	819	--
Hackberry	1,844	269	465	--	581	529	--	--	--	--	--	--	--
Balsam poplar	1,466	--	--	--	--	1,047	419	--	--	--	--	--	--
Bigtooth aspen	91,861	6,601	11,656	15,099	25,115	14,093	10,962	6,279	1,101	955	--	--	--
Quaking aspen	88,871	21,600	18,096	17,708	17,622	7,970	3,497	1,627	751	--	--	--	--
Paper birch	106,429	19,672	32,179	24,835	14,155	8,839	4,434	1,239	1,004	--	72	--	--
River birch	7,088	1,191	930	800	1,105	786	1,257	--	676	343	--	--	--
Black cherry	63,769	13,627	12,415	20,217	6,809	6,667	2,363	1,456	--	215	--	--	--
Black walnut	19,420	944	2,382	4,008	4,287	3,510	1,317	1,472	527	732	241	--	--
Butternut	35,561	3,690	7,494	6,278	5,933	4,534	5,060	1,040	372	333	578	249	--
Other hardwoods	26,895	5,856	5,402	2,511	4,429	3,937	2,031	937	657	138	997	--	--
Noncommercial species	21,295	14,281	5,194	839	616	365	--	--	--	--	--	--	--
Total	2,346,902	220,590	270,163	311,258	342,410	303,860	268,777	197,271	129,970	88,777	148,911	57,576	7,339
All species	2,443,324	253,665	303,552	322,499	349,716	306,612	270,471	198,271	131,406	89,973	152,244	57,576	7,339

Table 23.--Net volume of timber on commercial forest land by class of timber and softwoods and hardwoods, Southwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Class of timber	All species	Softwoods	Hardwoods
Live trees			
Growing-stock trees			
Poletimber	717,804	63,898	653,906
Sawtimber			
Saw log portion	819,296	21,419	797,877
Upper stem portion	398,571	6,459	392,112
Subtotal	1,217,867	27,878	1,189,989
Total growing stock	1,935,671	91,776	1,843,895
Cull trees			
Rough and rotten cull trees			
Poletimber	151,498	2,566	148,932
Sawtimber	232,722	1,910	230,812
Subtotal	384,220	4,476	379,744
Short-log trees	123,433	170	123,263
Total cull	507,653	4,646	503,007
All live trees	2,443,324	96,422	2,346,902
Salvable dead trees			
Growing-stock trees	32,932	593	32,339
Cull trees	2,269	--	2,269
All salvable dead trees	35,201	593	34,608
All classes	2,478,525	97,015	2,381,510

Table 24.--Net volume of all live trees by individual species, Southwest Unit, Wisconsin, 1983

Species	All live trees					Saw-log size trees	
	Total all live	Growing stock	Short-log cull	Rough and rotten cull	Total saw log	Sawtimber	Short-log
	-Thousand cubic feet-				-Thousand board feet[1]-		
Softwoods							
Jack pine	9,448	7,060	170	2,218	19,614	19,028	586
Red pine	68,175	67,514	--	661	73,260	73,260	--
White pine	14,713	14,305	--	408	57,982	57,982	--
White spruce	310	310	--	--	--	--	--
Black spruce	914	914	--	--	--	--	--
Balsam fir	194	194	--	--	--	--	--
Eastern redcedar	2,668	1,479	--	1,189	1,837	1,837	--
Total	96,422	91,776	170	4,476	152,693	152,107	586
Hardwoods							
White oak	295,360	217,978	25,563	51,819	892,790	825,634	67,156
Swamp white oak	9,343	8,125	410	808	29,938	28,902	1,036
Bur oak	84,365	52,208	6,671	25,486	201,068	183,119	17,949
Northern red oak	474,928	403,571	24,646	46,711	1,754,830	1,698,953	55,877
Northern pin oak	114,828	68,526	8,803	37,499	255,117	235,070	20,047
Black oak	143,057	106,719	12,131	24,207	449,917	422,350	27,567
Shagbark hickory	87,606	74,011	1,724	11,871	166,277	161,696	4,581
Bitternut hickory	42,851	40,083	246	2,522	30,583	29,895	688
Pignut hickory	78	--	--	78	--	--	--
American basswood	150,465	124,839	5,076	20,550	398,246	387,042	11,204
Yellow birch	1,468	1,263	--	205	3,262	3,262	--
Black maple	1,502	1,309	193	--	7,129	6,619	510
Sugar maple	148,375	115,560	9,745	23,070	442,700	418,442	24,258
Red maple	50,702	39,969	2,761	7,972	98,548	91,082	7,466
Silver maple	63,806	51,636	2,888	9,282	182,164	174,720	7,444
American elm	81,790	58,366	7,491	15,933	165,302	146,220	19,082
Slippery elm	35,376	29,538	1,077	4,761	81,456	78,721	2,735
Rock elm	1,059	1,059	--	--	3,937	3,937	--
Black ash	15,835	14,133	257	1,445	31,624	30,886	738
White ash	40,499	35,583	1,789	3,127	104,998	100,899	4,099
Green ash	9,756	8,700	231	825	30,599	30,101	498
Eastern cottonwood	19,526	18,288	734	504	76,434	73,983	2,451
Black willow	9,828	6,822	788	2,218	21,673	19,288	2,385
Hackberry	1,844	1,635	--	209	4,632	4,632	--
Balsam poplar	1,466	1,466	--	--	6,428	6,428	--
Bigtooth aspen	91,861	87,754	1,719	2,388	253,397	250,507	2,890
Quaking aspen	88,871	79,237	--	9,634	136,605	136,605	--
Paper birch	106,429	91,251	2,161	13,017	121,007	115,121	5,886
River birch	7,088	5,940	645	503	16,050	13,929	2,121
Black cherry	63,769	47,829	1,647	14,293	70,654	66,409	4,245
Black walnut	19,420	16,233	478	2,709	60,946	59,651	1,295
Butternut	35,561	21,628	1,990	11,943	66,191	60,829	5,362
Boxelder	21,619	8,343	1,399	11,877	18,574	13,546	5,028
Honeylocust	1,193	1,128	--	65	2,535	2,535	--
Black locust	4,083	3,165	--	918	5,993	5,993	--
Total	2,325,607	1,843,895	123,263	358,449	6,191,604	5,887,006	304,598
All species[2]	2,422,029	1,935,671	123,433	362,925	6,344,297	6,039,113	305,184

[1] International 1/4-inch rule.

[2] These totals do not include volume for noncommercial species. Volumes for individual noncommercial species are found in Table 25.

Table 25.--Net volume of noncommercial species on commercial forest land by individual species, Southwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species	Cull volume
Apple	1,104
Eastern hophornbeam	19,145
Pincherry	1,046
All species	21,295

Table 26.--Net volume of growing stock on commercial forest land by species group and county, Southwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All counties	County							
		Buffalo	Crawford	Dunn	Grant	Iowa	La Crosse	Lafayette	Pepin
Softwoods									
Jack pine	7,060	--	--	2,578	--	--	3,596	--	--
Red pine	67,514	5,415	--	24,472	--	191	6,281	--	--
White pine	14,305	--	--	1,634	1,082	2,663	2,496	--	168
White spruce	310	--	--	--	--	--	--	--	--
Black spruce	914	--	--	--	--	--	--	--	--
Balsam fir	194	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--
Eastern redcedar	1,479	--	--	--	259	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--
Total	91,776	5,415	--	28,684	1,341	2,854	12,373	--	168
Hardwoods									
White oak	278,311	22,624	24,513	25,775	41,746	23,203	15,884	11,487	3,382
Select red oak	403,571	54,034	40,838	36,716	36,821	14,001	37,183	1,896	10,063
Other red oak	175,245	31,029	14,009	10,999	21,539	9,940	13,929	4,126	279
Select hickory	74,011	10,044	11,023	--	4,794	6,322	10,160	355	--
Other hickory	40,083	235	5,627	902	2,335	2,589	992	182	--
Basswood	124,839	5,186	10,993	9,075	12,071	6,308	5,500	3,071	4,227
Beech	--	--	--	--	--	--	--	--	--
Yellow birch	1,263	--	--	842	--	--	--	--	--
Hard maple	116,869	664	11,069	11,473	10,995	3,556	--	--	2,524
Soft maple	91,605	4,938	14,914	15,442	9,385	2,573	4,597	--	5,640
Elm	88,963	7,385	9,674	5,147	12,540	6,839	4,913	2,203	2,134
Black ash	14,133	--	1,835	3,016	1,129	2,171	775	--	1,421
White & green ash	44,283	2,928	6,309	5,274	2,843	2,200	--	1,075	1,800
Sycamore	18,288	2,377	279	320	759	1,204	3,237	--	1,357
Cottonwood	6,822	--	1,485	499	--	430	618	--	1,558
Willow	1,635	78	--	--	130	--	110	--	--
Hackberry	1,466	419	--	--	--	--	--	--	--
Balsam poplar	87,754	17,395	7,610	14,380	2,592	3,036	6,159	--	3,813
Bigtooth aspen	79,237	17,908	1,629	9,036	6,163	4,948	4,989	1,131	1,800
Quaking aspen	91,251	24,350	5,405	8,389	3,534	3,208	8,463	--	2,774
Paper birch	5,940	514	600	--	2,352	1,084	968	--	422
Black cherry	47,829	9,598	1,244	1,540	1,326	3,781	3,558	2,730	368
Black walnut	16,233	--	3,533	262	5,813	3,207	--	635	--
Butternut	21,628	1,110	1,628	1,357	2,094	948	1,863	--	513
Other hardwoods	12,636	3,839	470	--	458	1,727	761	--	454
Total	1,843,895	216,655	174,687	160,444	181,419	103,275	124,659	28,891	44,529
All species	1,935,671	222,070	174,687	189,128	182,760	106,129	137,032	28,891	44,697

(Table 26 continued on next page)

(Table 26 continued)

Species group	County					
	Pierce	Richland	St. Croix	Sauk	Trempealeau	Vernon
Softwoods						
Jack pine	--	--	--	886	--	--
Red pine	3,331	--	7,475	7,442	12,907	--
White pine	--	--	--	2,690	2,247	1,325
White spruce	--	--	310	--	--	--
Black spruce	--	--	--	914	--	--
Balsam fir	--	--	--	194	--	--
Hemlock	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--
Eastern redcedar	--	--	--	160	1,060	--
Northern white-cedar	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--
Total	3,331	--	7,785	12,286	16,214	1,325
Hardwoods						
White oak	5,356	18,557	3,920	26,652	16,599	38,613
Select red oak	11,476	18,431	5,889	51,839	26,656	57,728
Other red oak	3,217	6,403	3,305	14,126	28,272	14,072
Select hickory	--	8,027	--	7,582	3,739	11,965
Other hickory	2,475	12,855	151	5,253	1,348	5,139
Basswood	9,698	14,916	2,734	12,260	2,907	25,893
Beech	--	--	--	--	--	--
Yellow birch	--	--	--	421	--	--
Hard maple	22,926	27,209	--	4,770	--	21,683
Soft maple	--	7,317	--	19,834	4,556	2,409
Elm	5,002	12,118	1,033	6,457	2,255	11,263
Black ash	--	548	2,555	162	--	521
White & green ash	3,104	6,648	2,732	2,974	193	6,203
Cottonwood	2,131	2,088	188	--	1,946	2,402
Willow	--	184	--	--	2,048	--
Hackberry	--	1,110	--	126	--	81
Balsam poplar	--	--	--	--	1,047	--
Bigtooth aspen	1,885	7,187	3,174	14,002	5,357	1,164
Quaking aspen	3,490	1,499	13,651	7,980	2,399	2,614
Paper birch	3,111	4,096	6,070	1,860	16,760	3,231
River birch	--	--	--	--	--	--
Black cherry	2,618	2,903	--	5,890	6,340	5,933
Black walnut	--	423	--	--	--	2,360
Butternut	2,959	4,851	253	579	--	3,473
Other hardwoods	1,445	1,269	1,496	--	542	175
Total	80,893	158,639	47,151	182,767	122,964	216,922
All species	84,224	158,639	54,936	195,053	139,178	218,247

Table 27.--Net volume of sawtimber on commercial forest land by species group and county, Southwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All counties	County							
		Buffalo	Crawford	Dunn	Grant	Iowa	La Crosse	Lafayette	Pepin
Softwoods									
Jack pine	19,028	--	--	5,163	--	--	13,865	--	--
Red pine	73,260	2,993	--	19,251	--	--	30,121	--	--
White pine	57,982	--	--	7,207	6,298	14,234	14,283	--	654
White spruce	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--
Eastern redcedar	1,837	--	--	--	943	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--
Total	152,107	2,993	--	31,621	7,241	14,234	58,269	--	654
Hardwoods									
White oak	1,037,655	86,854	83,487	85,681	153,370	100,576	57,807	54,125	10,961
Select red oak	1,698,953	206,157	176,224	149,716	164,905	57,240	160,386	8,956	37,803
Other red oak	657,420	124,988	45,740	26,077	79,005	37,232	50,751	17,879	1,294
Select hickory	161,696	21,850	11,279	--	14,301	18,836	21,376	976	--
Other hickory	29,895	1,202	5,698	--	4,980	1,071	3,800	--	--
Basswood	387,042	11,516	28,736	30,418	39,368	16,282	13,225	8,483	15,479
Beech	--	--	--	--	--	--	--	--	--
Yellow birch	3,262	--	--	2,503	--	--	--	--	--
Hard maple	425,061	1,574	31,952	30,957	44,562	9,831	--	--	10,300
Soft maple	265,802	23,294	43,192	44,149	40,561	5,771	8,519	--	19,966
Elm	228,878	17,552	24,251	13,837	39,889	17,697	11,122	6,170	6,873
Black ash	30,886	--	1,137	5,688	4,908	--	1,710	--	4,227
White & green ash	131,000	9,678	21,499	21,057	11,165	3,617	--	4,516	4,986
Cottonwood	73,983	8,538	1,268	1,437	3,225	5,366	13,767	--	3,892
Willow	19,288	--	4,545	2,063	--	1,022	--	--	6,783
Hackberry	4,632	--	--	--	--	--	--	--	--
Balsam poplar	6,428	1,945	--	--	--	--	--	--	--
Bigtooth aspen	250,507	54,638	13,125	47,951	7,521	7,101	17,109	--	15,083
Quaking aspen	136,605	49,376	3,590	6,797	1,070	--	5,823	1,149	3,188
Paper birch	115,121	28,368	14,409	12,395	4,526	6,060	6,595	--	1,912
River birch	13,929	970	2,726	--	1,606	2,202	4,430	--	1,995
Black cherry	66,409	15,182	--	1,948	1,634	6,957	6,816	3,408	--
Black walnut	59,651	--	10,643	--	25,426	10,696	--	--	--
Butternut	60,829	1,611	7,198	5,939	--	2,852	7,402	--	1,612
Other hardwoods	22,074	2,455	881	--	2,622	2,460	3,128	--	1,325
Total	5,887,006	667,748	531,580	488,613	644,644	312,869	393,766	105,662	147,679
All species	6,039,113	670,741	531,580	520,234	651,885	327,103	452,035	105,662	148,333

[1/] International 1/4-inch rule.

(Table 27 continued on next page)

(Table 27 continued)

Species group	County					
	Pierce	Richland	St. Croix	Sauk	Trempealeau	Vernon
Softwoods						
Jack pine	--	--	--	--	--	--
Red pine	13,479	--	3,243	4,173	--	--
White pine	--	--	--	10,553	--	4,753
White spruce	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--
Eastern redcedar	--	--	--	894	--	--
Northern white-cedar	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--
Total	13,479	--	3,243	15,620	--	4,753
Hardwoods						
White oak	16,525	63,188	6,233	105,801	60,998	152,049
Select red oak	47,333	75,642	18,646	210,438	114,963	270,544
Other red oak	14,799	27,004	10,606	58,479	104,459	59,107
Select hickory	--	24,747	--	12,496	1,018	34,817
Other hickory	5,371	2,406	--	1,975	--	3,392
Basswood	34,615	54,653	9,999	34,883	4,647	84,738
Beech	--	--	--	--	--	--
Yellow birch	--	--	--	759	--	--
Hard maple	88,301	111,002	--	12,693	--	83,889
Soft maple	--	22,511	--	33,827	17,556	6,456
Elm	13,704	32,325	3,283	9,005	4,966	28,204
Black ash	--	--	10,437	953	--	1,826
White & green ash	6,508	26,474	1,074	5,476	1,057	13,893
Cottonwood	8,205	9,505	819	--	8,021	9,940
Willow	--	819	--	--	4,056	--
Hackberry	--	4,632	--	--	--	--
Balsam poplar	--	--	--	--	4,483	--
Bigtooth aspen	6,636	21,226	11,528	31,448	15,619	1,522
Quaking aspen	3,423	4,730	30,845	18,473	8,141	--
Paper birch	4,917	1,610	5,773	1,183	27,373	--
River birch	--	--	--	--	--	--
Black cherry	1,324	2,906	--	6,732	13,130	6,372
Black walnut	--	--	--	--	--	12,886
Butternut	8,119	8,302	--	3,507	--	14,287
Other hardwoods	5,757	2,560	886	--	--	--
Total	265,537	496,242	110,129	548,128	390,487	783,922
All species	279,016	496,242	113,372	563,748	390,487	788,675

Table 28.--Net volume of growing stock on commercial forest land by species group and diameter class, Southwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods													
Jack pine	7,060	776	2,589	2,064	685	946	--	--	--	--	--	--	--
Red pine	67,514	27,583	27,107	7,553	2,907	853	294	296	606	315	--	--	--
White pine	14,305	1,513	1,753	963	2,865	546	917	704	830	881	3,333	--	--
White spruce	310	135	175	--	--	--	--	--	--	--	--	--	--
Black spruce	914	722	192	--	--	--	--	--	--	--	--	--	--
Balsam fir	194	--	194	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	1,479	1,159	--	160	--	160	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	91,776	31,888	32,010	10,740	6,457	2,505	1,211	1,000	1,436	1,196	3,333	--	--
Hardwoods													
White oak	278,311	15,465	24,709	35,419	49,617	40,148	38,308	24,603	18,273	12,244	14,871	3,872	782
Select red oak	403,571	13,515	16,128	29,498	44,088	60,669	60,167	56,556	40,948	27,863	44,387	9,210	542
Other red oak	175,245	5,128	17,572	14,641	27,490	27,008	29,280	19,141	11,454	6,336	14,114	3,081	--
Select hickory	74,011	12,600	16,774	13,988	13,906	8,738	4,716	1,696	1,184	212	197	--	--
Other hickory	40,083	21,929	8,032	4,417	3,177	1,269	301	705	253	--	--	--	--
Basswood	124,839	6,371	17,701	21,447	19,680	16,516	12,885	10,457	6,464	4,529	4,922	3,004	863
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	1,263	--	113	442	--	427	281	--	--	--	--	--	--
Hard maple	116,869	11,266	10,933	11,185	13,647	14,784	14,472	11,531	8,272	5,150	10,785	4,552	292
Soft maple	91,605	14,207	12,472	11,189	11,118	9,397	6,440	7,242	4,888	3,623	5,521	4,384	1,124
Elm	88,963	5,492	12,083	19,569	16,782	11,129	8,464	5,029	1,157	1,146	4,761	3,050	301
Black ash	14,133	3,225	2,761	2,330	2,577	566	1,420	614	441	--	199	--	--
White & green ash	44,283	5,412	6,256	7,565	6,751	6,018	6,094	3,166	373	924	1,724	--	--
Cottonwood	18,288	400	476	554	2,309	1,515	738	2,612	2,562	1,084	1,268	3,844	926
Willow	6,822	133	625	1,520	1,634	688	407	1,173	--	314	328	--	--
Hackberry	1,635	269	256	--	581	529	--	--	--	--	--	--	--
Balsam poplar	1,466	--	--	--	--	1,047	419	--	--	--	--	--	--
Bigtooth aspen	87,754	6,474	11,583	14,984	24,301	13,556	10,317	4,750	1,101	688	--	--	--
Quaking aspen	79,237	18,683	16,239	16,114	16,543	6,837	2,966	1,104	751	--	--	--	--
Paper birch	91,251	19,503	28,409	20,839	11,841	6,504	2,903	1,022	230	--	--	--	--
River birch	5,940	1,191	930	800	810	675	892	--	299	343	--	--	--
Black cherry	47,829	9,564	9,038	17,417	5,556	3,724	1,074	1,456	--	--	--	--	--
Black walnut	16,233	663	1,963	3,276	3,804	3,510	620	972	527	657	241	--	--
Butternut	21,628	1,979	4,784	3,914	3,816	3,114	3,089	318	--	--	365	249	--
Other hardwoods	12,636	3,055	4,348	1,262	1,423	1,641	--	250	657	--	--	--	--
Total	1,843,895	176,524	224,185	252,370	281,451	240,009	206,253	154,397	99,834	65,113	103,683	35,246	4,830
All species	1,935,671	208,412	256,195	263,110	287,908	242,514	207,464	155,397	101,270	66,309	107,016	35,246	4,830

Table 29.--Net volume of sawtimber on commercial forest land by species group and diameter class, Southwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods											
Jack pine	19,028	10,628	3,518	4,882	--	--	--	--	--	--	--
Red pine	73,260	43,294	16,487	4,827	1,665	1,699	3,470	1,818	--	--	--
White pine	57,982	3,820	13,042	2,738	4,932	3,865	4,670	5,092	19,823	--	--
White spruce	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	1,837	894	--	943	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	152,107	58,636	33,047	13,390	6,597	5,564	8,140	6,910	19,823	--	--
Hardwoods											
White oak	1,037,655	--	273,469	208,102	192,027	120,869	88,754	59,496	72,190	18,912	3,836
Select red oak	1,698,953	--	215,324	293,749	293,285	278,037	202,860	139,495	225,410	47,915	2,878
Other red oak	657,420	--	129,095	127,400	138,233	91,276	55,301	30,794	69,741	15,580	--
Select hickory	161,696	--	77,237	45,054	23,265	8,378	5,770	1,018	974	--	--
Other hickory	29,895	--	17,338	6,469	1,450	3,431	1,207	--	--	--	--
Basswood	387,042	--	94,294	78,923	62,203	51,240	32,209	22,713	25,119	15,695	4,646
Beech	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	3,262	--	--	1,911	1,351	--	--	--	--	--	--
Hard maple	425,061	--	65,559	72,577	72,620	59,016	43,159	27,192	58,064	25,202	1,672
Soft maple	265,802	--	61,952	48,133	31,447	34,340	22,678	16,597	25,307	20,138	5,210
Elm	228,878	--	71,280	48,089	37,323	22,561	5,310	5,291	22,557	14,968	1,499
Black ash	30,886	--	13,434	3,262	7,728	3,162	2,286	--	1,014	--	--
White & green ash	131,000	--	39,339	31,719	30,503	15,306	1,721	4,397	8,015	--	--
Cottonwood	73,983	--	9,527	6,463	3,057	10,986	10,981	4,810	5,728	17,939	4,492
Willow	19,288	--	6,923	2,835	1,651	5,013	--	1,379	1,487	--	--
Hackberry	4,632	--	2,340	2,292	--	--	--	--	--	--	--
Balsam poplar	6,428	--	--	4,483	1,945	--	--	--	--	--	--
Bigtooth aspen	250,507	--	105,922	63,383	49,051	23,267	5,471	3,413	--	--	--
Quaking aspen	136,605	--	76,851	34,023	15,546	6,010	4,175	--	--	--	--
Paper birch	115,121	--	59,150	33,691	15,447	5,546	1,287	--	--	--	--
River birch	13,929	--	3,738	3,136	4,088	--	1,361	1,606	--	--	--
Black cherry	66,409	--	32,589	20,803	5,646	7,371	--	--	--	--	--
Black walnut	59,651	--	23,900	19,937	3,409	5,206	2,705	3,289	1,205	--	--
Butternut	60,829	--	22,730	17,187	16,175	1,654	--	--	1,856	1,227	--
Other hardwoods	22,074	--	7,898	8,999	--	1,405	3,772	--	--	--	--
Total	5,887,006	--	1,409,889	1,182,620	1,007,450	754,074	491,007	321,490	518,667	177,576	24,233
All species	6,039,113	58,636	1,442,936	1,196,010	1,014,047	759,638	499,147	328,400	538,490	177,576	24,233

[1/] International 1/4-inch rule.

Table 30.--Net volume of growing stock on commercial forest land by species group and forest type, Southwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	7,060	5,571	1,250	--	--	--	--	--
Red pine	67,514	1,137	56,641	--	--	--	--	--
White pine	14,305	976	1,478	4,743	--	--	--	--
White spruce	310	--	310	--	--	--	--	--
Black spruce	914	--	914	--	--	--	--	--
Balsam fir	194	--	194	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	1,479	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	91,776	7,684	60,787	4,743	--	--	--	--
Hardwoods								
White oak	278,311	--	--	--	--	--	--	--
Select red oak	403,571	--	1,072	--	--	--	--	--
Other red oak	175,245	314	507	--	--	--	--	--
Select hickory	74,011	--	--	--	--	--	--	--
Other hickory	40,083	--	--	--	--	--	--	--
Basswood	124,839	--	--	--	--	--	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	1,263	--	--	--	--	--	--	--
Hard maple	116,869	--	--	--	--	--	--	--
Soft maple	91,605	--	--	--	--	--	--	--
Elm	88,963	307	--	--	--	--	--	--
Black ash	14,133	--	--	--	--	--	--	--
White & green ash	44,283	--	--	--	--	--	--	--
Cottonwood	18,288	--	--	394	--	--	--	--
Willow	6,822	--	--	--	--	--	--	--
Hackberry	1,635	--	--	--	--	--	--	--
Balsam poplar	1,466	--	--	--	--	--	--	--
Bigtooth aspen	87,754	--	--	--	--	--	--	--
Quaking aspen	79,237	343	952	--	--	--	--	--
Paper birch	91,251	--	--	--	--	--	--	--
River birch	5,940	--	--	--	--	--	--	--
Black cherry	47,829	--	224	--	--	--	--	--
Black walnut	16,233	--	--	--	--	--	--	--
Butternut	21,628	--	--	--	--	--	--	--
Other hardwoods	12,636	--	581	--	--	--	--	--
Total	1,843,895	964	3,336	394	--	--	--	--
All species	1,935,671	8,648	64,123	5,137	--	--	--	--

(Table 30 continued on next page)

(Table 30 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	--	239	--	--	--	--	--	--
Red pine	--	8,998	--	738	--	--	--	--
White pine	--	2,298	--	4,739	71	--	--	--
White spruce	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	--	1,060	--	419	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	--	12,595	--	5,896	71	--	--	--
Hardwoods								
White oak	--	236,350	3,909	32,974	2,308	1,714	--	1,056
Select red oak	--	335,782	--	51,793	4,829	9,598	--	497
Other red oak	--	162,643	1,234	7,388	1,509	499	--	1,151
Select hickory	--	62,128	--	9,244	--	2,639	--	--
Other hickory	--	23,962	442	14,624	1,055	--	--	--
Basswood	--	47,258	947	75,173	589	541	--	331
Beech	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	1,001	262	--	--	--
Hard maple	--	21,219	--	95,375	--	275	--	--
Soft maple	--	16,753	52,413	21,561	180	698	--	--
Elm	--	35,087	8,687	42,230	1,752	900	--	--
Black ash	--	2,475	9,161	2,497	--	--	--	--
White & green ash	--	9,743	8,612	23,312	2,436	--	--	180
Cottonwood	--	5,003	7,449	3,422	2,020	--	--	--
Willow	--	--	5,767	184	618	--	--	253
Hackberry	--	78	581	976	--	--	--	--
Balsam poplar	--	1,047	--	--	--	419	--	--
Bigtooth aspen	--	51,964	154	12,970	17,827	4,839	--	--
Quaking aspen	--	27,515	--	11,685	34,804	3,631	--	307
Paper birch	--	42,164	1,527	6,878	5,854	34,828	--	--
River birch	--	591	5,349	--	--	--	--	--
Black cherry	--	28,590	215	17,749	199	852	--	--
Black walnut	--	12,334	--	3,443	--	--	--	456
Butternut	--	13,260	--	8,115	--	--	--	253
Other hardwoods	--	2,620	4,977	3,979	330	149	--	--
Total	--	1,138,566	111,424	446,573	76,572	61,582	--	4,484
All species	--	1,151,161	111,424	452,469	76,643	61,582	--	4,484

Table 31.--Net volume of sawtimber on commercial forest land by species group and forest type, Southwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All types	Forest type: Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	19,028	18,139	889	--	--	--	--	--
Red pine	73,260	4,173	47,913	--	--	--	--	--
White pine	57,982	5,231	5,600	14,283	--	--	--	--
White spruce	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	1,837	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	152,107	27,543	54,402	14,283	--	--	--	--
Hardwoods								
White oak	1,037,655	--	--	--	--	--	--	--
Select red oak	1,698,953	--	--	--	--	--	--	--
Other red oak	657,420	1,514	2,346	--	--	--	--	--
Select hickory	161,696	--	--	--	--	--	--	--
Other hickory	29,895	--	--	--	--	--	--	--
Basswood	387,042	--	--	--	--	--	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	3,262	--	--	--	--	--	--	--
Hard maple	425,061	--	--	--	--	--	--	--
Soft maple	265,802	--	--	--	--	--	--	--
Elm	228,878	1,357	--	--	--	--	--	--
Black ash	30,886	--	--	--	--	--	--	--
White & green ash	131,000	--	--	--	--	--	--	--
Cottonwood	73,983	--	--	1,722	--	--	--	--
Willow	19,288	--	--	--	--	--	--	--
Hackberry	4,632	--	--	--	--	--	--	--
Balsam poplar	6,428	--	--	--	--	--	--	--
Bigtooth aspen	250,507	--	--	--	--	--	--	--
Quaking aspen	136,605	--	--	--	--	--	--	--
Paper birch	115,121	--	--	--	--	--	--	--
River birch	13,929	--	--	--	--	--	--	--
Black cherry	66,409	--	1,147	--	--	--	--	--
Black walnut	59,651	--	--	--	--	--	--	--
Butternut	60,829	--	--	--	--	--	--	--
Other hardwoods	22,074	--	3,128	--	--	--	--	--
Total	5,887,006	2,871	6,621	1,722	--	--	--	--
All species	6,039,113	30,414	61,023	16,005	--	--	--	--

[1/] International 1/4-inch rule.

(Table 31 continued on next page)

(Table 31 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	--	--	--	--	--	--	--	--
Red pine	--	17,931	--	3,243	--	--	--	--
White pine	--	8,692	--	24,176	--	--	--	--
White spruce	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	--	--	--	1,837	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	--	26,623	--	29,256	--	--	--	--
Hardwoods								
White oak	--	875,456	8,805	139,163	7,113	4,215	--	2,903
Select red oak	--	1,439,902	--	202,564	18,920	35,034	--	2,533
Other red oak	--	608,151	4,075	29,679	6,484	2,486	--	2,685
Select hickory	--	131,051	--	23,270	--	7,375	--	--
Other hickory	--	16,848	--	12,012	1,035	--	--	--
Basswood	--	128,541	4,780	251,136	963	--	--	1,622
Beech	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	2,110	1,152	--	--	--
Hard maple	--	72,142	--	352,919	--	--	--	--
Soft maple	--	33,979	178,070	50,520	--	3,233	--	--
Elm	--	93,825	33,211	95,389	4,333	763	--	--
Black ash	--	8,306	18,761	3,819	--	--	--	--
White & green ash	--	21,432	31,431	74,737	2,326	--	--	1,074
Cottonwood	--	21,378	32,008	13,689	5,186	--	--	--
Willow	--	--	17,447	819	--	--	--	1,022
Hackberry	--	--	2,340	2,292	--	--	--	--
Balsam poplar	--	4,483	--	--	--	1,945	--	--
Bigtooth aspen	--	150,916	813	24,251	58,210	16,317	--	--
Quaking aspen	--	52,183	--	20,592	49,189	14,641	--	--
Paper birch	--	43,884	4,526	3,707	5,047	57,957	--	--
River birch	--	2,723	11,206	--	--	--	--	--
Black cherry	--	33,140	--	30,945	--	1,177	--	--
Black walnut	--	50,257	--	8,117	--	--	--	1,277
Butternut	--	34,897	--	25,932	--	--	--	--
Other hardwoods	--	5,551	6,313	6,174	908	--	--	--
Total	--	3,829,045	353,786	1,373,836	160,866	145,143	--	13,116
All species	--	3,855,668	353,786	1,403,092	160,866	145,143	--	13,116

Table 32.--Net volume of growing stock on commercial forest land by species group and ownership class, Southwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All owners	Ownership class								
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Softwoods										
Jack pine	7,060	--	--	--	886	--	--	5,683	491	--
Red pine	67,514	--	--	--	1,137	--	--	37,197	3,655	25,525
White pine	14,305	--	--	--	--	--	--	10,260	--	4,045
White spruce	310	--	--	--	--	--	--	310	--	--
Black spruce	914	--	--	--	--	--	--	--	--	914
Balsam fir	194	--	--	--	--	--	--	--	--	194
Hemlock	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	1,479	--	--	--	--	--	--	1,319	--	160
Northern white-cedar	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--
Total	91,776	--	--	--	2,023	--	--	54,769	4,146	30,838
Hardwoods										
White oak	278,311	--	1,650	7,780	619	--	--	187,542	6,820	73,900
Select red oak	403,571	--	--	--	--	--	--	291,720	15,233	96,618
Other red oak	175,245	--	--	711	136	--	--	124,323	5,787	44,288
Select hickory	74,011	--	--	287	--	--	--	51,021	4,232	18,471
Other hickory	40,083	--	--	--	--	--	--	28,345	3,822	7,916
Basswood	124,839	--	--	437	--	--	--	84,140	4,393	35,869
Beech	--	--	--	--	--	--	--	--	--	--
Yellow birch	1,263	--	--	--	--	--	--	683	--	580
Hard maple	116,869	--	668	--	--	--	--	88,750	980	26,471
Soft maple	91,605	--	19,771	7,360	--	--	--	54,444	1,056	8,974
Elm	88,963	--	957	2,429	172	--	--	57,645	4,244	23,516
Black ash	14,133	--	295	1,335	--	--	--	5,267	2,319	4,917
White & green ash	44,283	--	2,433	1,963	597	--	--	28,202	2,134	8,954
Cottonwood	18,288	--	2,402	864	--	--	--	11,877	367	2,778
Willow	6,822	--	645	--	--	--	--	5,337	--	840
Hackberry	1,635	--	--	--	--	--	--	1,399	110	126
Balsam poplar	1,466	--	--	--	--	--	--	419	--	1,047
Bigtooth aspen	87,754	--	--	1,662	--	--	--	65,054	3,680	17,358
Quaking aspen	79,237	--	--	--	--	--	--	59,848	6,549	12,840
Paper birch	91,251	--	--	798	--	--	--	63,810	5,232	21,411
River birch	5,940	--	642	1,172	--	--	--	1,314	2,435	377
Black cherry	47,829	--	--	307	--	--	--	37,789	1,070	8,663
Black walnut	16,233	--	--	--	510	--	--	10,927	163	4,633
Butternut	21,628	--	--	335	--	--	--	15,109	2,337	3,847
Other hardwoods	12,636	--	--	--	137	--	--	10,856	--	1,643
Total	1,843,895	--	29,463	27,440	2,171	--	--	1,285,821	72,963	426,037
All species	1,935,671	--	29,463	27,440	4,194	--	--	1,340,590	77,109	456,875

Table 33.--Net volume of sawtimber on commercial forest land by species group and ownership class, Southwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All owners	Ownership class								
		National Forest	Misc. federal	State	County & municipal	Indian	Forest industry	Farmer	Misc. priv.-corp.	Misc. priv.-indiv.
Softwoods										
Jack pine	19,028	--	--	--	--	--	--	18,139	889	--
Red pine	73,260	--	--	--	4,173	--	--	53,986	6,184	8,917
White pine	57,982	--	--	--	--	--	--	38,099	--	19,883
White spruce	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	1,837	--	--	--	--	--	--	943	--	894
Northern white-cedar	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--
Total	152,107	--	--	--	4,173	--	--	111,167	7,073	29,694
Hardwoods										
White oak	1,037,655	--	6,314	28,247	2,630	--	--	700,564	28,274	271,626
Select red oak	1,698,953	--	--	--	--	--	--	1,234,119	71,412	393,422
Other red oak	657,420	--	--	3,538	--	--	--	487,143	16,137	150,602
Select hickory	161,696	--	--	--	--	--	--	104,608	17,995	39,093
Other hickory	29,895	--	--	--	--	--	--	20,876	1,769	7,250
Basswood	387,042	--	--	2,067	--	--	--	274,141	16,593	94,241
Beech	--	--	--	--	--	--	--	--	--	--
Yellow birch	3,262	--	--	--	--	--	--	1,911	--	1,351
Hard maple	425,061	--	3,571	--	--	--	--	327,779	--	93,711
Soft maple	265,802	--	62,423	28,320	--	--	--	149,744	5,129	20,186
Elm	228,878	--	2,770	9,972	774	--	--	153,079	7,988	54,295
Black ash	30,886	--	--	6,081	--	--	--	4,262	6,389	14,154
White & green ash	131,000	--	11,627	2,392	2,887	--	--	73,055	5,462	35,577
Cottonwood	73,983	--	9,940	3,779	--	--	--	47,565	1,653	11,046
Willow	19,288	--	2,599	--	--	--	--	14,743	--	1,946
Hackberry	4,632	--	--	--	--	--	--	4,632	--	--
Balsam poplar	6,428	--	--	--	--	--	--	1,945	--	4,483
Bigtooth aspen	250,507	--	--	4,572	--	--	--	182,584	7,172	56,179
Quaking aspen	136,605	--	--	--	--	--	--	109,661	10,781	16,163
Paper birch	115,121	--	--	1,285	--	--	--	74,500	10,070	29,266
River birch	13,929	--	2,967	2,202	--	--	--	6,083	970	1,707
Black cherry	66,409	--	--	1,647	--	--	--	53,555	--	11,207
Black walnut	59,651	--	--	--	3,408	--	--	40,206	1,036	15,001
Butternut	60,829	--	--	1,803	--	--	--	46,230	6,753	6,043
Other hardwoods	22,074	--	--	--	799	--	--	20,394	--	881
Total	5,887,006	--	102,211	95,905	10,498	--	--	4,133,379	215,583	1,329,430
All species	6,039,113	--	102,211	95,905	14,671	--	--	4,244,546	222,656	1,359,124

[1/] International 1/4-inch rule.

Table 34.--Net volume of growing stock on commercial forest land by forest type and stand-age class, Southwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	8,648	--	--	--	2,715	5,933	--	--	--	--	--	--	--	--
Red pine	64,123	--	10,623	39,549	13,951	--	--	--	--	--	--	--	--	--
White pine	5,137	--	2,247	--	--	--	--	--	2,890	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oak-hickory	1,151,161	35,128	15,397	25,633	33,630	137,170	123,999	98,866	113,650	165,816	121,097	137,112	112,225	31,438
Elm-ash-soft maple	111,424	8,156	3,207	4,305	7,697	8,101	14,419	9,987	17,956	16,377	8,410	12,809	--	--
Maple-birch	452,469	12,774	26,692	27,565	51,288	36,590	64,953	22,239	16,130	51,489	58,411	58,850	13,293	12,195
Aspen	76,643	2,052	8,214	10,020	9,193	15,142	17,939	11,002	--	--	3,081	--	--	--
Paper birch	61,582	2,330	1,346	2,183	12,675	15,247	22,848	4,953	--	--	--	--	--	--
Exotic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	4,484	4,484	--	--	--	--	--	--	--	--	--	--	--	--
All types	1,935,671	64,924	67,726	109,255	131,149	218,183	244,158	147,047	150,626	233,682	190,999	208,771	125,518	43,633

Table 35.--Net volume of sawtimber on commercial forest land by forest type and stand-age class, Southwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Forest type	All ages	Stand-age class (years)												
		1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-140	141+
Jack pine	30,414	--	--	--	10,862	19,552	--	--	--	--	--	--	--	--
Red pine	61,023	--	--	20,316	40,707	--	--	--	--	--	--	--	--	--
White pine	16,005	--	--	--	--	--	--	--	16,005	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oak-hickory	3,855,668	98,468	48,868	51,578	36,791	300,723	343,366	307,025	384,233	625,155	495,778	559,116	486,322	118,245
Elm-ash-soft maple	353,786	22,356	10,508	2,960	11,272	29,252	37,309	32,920	72,805	62,201	31,103	41,100	--	--
Maple-birch	1,403,092	41,157	87,318	77,943	93,615	67,963	148,100	74,236	52,149	192,037	236,534	216,117	61,455	54,468
Aspen	160,866	4,037	9,464	25,248	20,735	13,712	57,908	18,285	--	--	11,477	--	--	--
Paper birch	145,143	5,697	3,641	2,613	18,010	38,923	64,506	11,753	--	--	--	--	--	--
Exotic	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	13,116	13,116	--	--	--	--	--	--	--	--	--	--	--	--
All types	6,039,113	184,831	159,799	180,658	231,992	470,125	651,189	444,219	525,192	879,393	774,892	816,333	547,777	172,713

[1/] International 1/4-inch rule.

Table 36.--Net volume of growing stock on commercial forest land by forest type, stand-size class, and basal-area class, Southwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)						
		0-10	11-20	21-30	31-40	41-50	51-60	61-70
Jack pine								
Sawtimber	6,625	--	--	--	--	--	--	--
Poletimber	2,023	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	8,648	--	--	--	--	--	--	--
Red pine								
Sawtimber	7,934	--	--	--	--	--	--	--
Poletimber	55,062	--	--	--	--	--	--	--
Sapling & seedling	1,127	--	174	--	--	--	953	--
All stands	64,123	--	174	--	--	--	953	--
White pine								
Sawtimber	2,890	--	--	--	2,890	--	--	--
Poletimber	2,247	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	5,137	--	--	--	2,890	--	--	--
Balsam fir								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
White spruce								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Black spruce								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Northern white-cedar								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine							
Sawtimber	--	2,715	--	--	3,910	--	--
Poletimber	--	--	--	--	2,023	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	2,715	--	--	5,933	--	--
Red pine							
Sawtimber	--	--	--	--	--	7,934	--
Poletimber	3,411	7,433	--	--	12,128	6,018	26,072
Sapling & seedling	--	--	--	--	--	--	--
All stands	3,411	7,433	--	--	12,128	13,952	26,072
White pine							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	2,247	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	2,247	--	--	--
Balsam fir							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
White spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Black spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Northern white-cedar							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre) 0-10	11-20	21-30	31-40	41-50	51-60	61-70
Tamarack								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Oak-hickory								
Sawtimber	892,212	--	--	3,863	5,555	14,214	30,117	42,185
Poletimber	204,070	--	--	--	1,503	1,102	8,480	12,203
Sapling & seedling	54,879	144	1,617	4,975	6,128	2,981	10,431	6,946
All stands	1,151,161	144	1,617	8,838	13,186	18,297	49,028	61,334
Elm-ash-soft maple								
Sawtimber	81,426	--	--	--	1,413	2,574	7,112	--
Poletimber	17,320	--	--	--	--	--	6,633	--
Sapling & seedling	12,678	--	1,700	2,959	1,513	2,751	1,540	--
All stands	111,424	--	1,700	2,959	2,926	5,325	15,285	--
Maple-birch								
Sawtimber	271,748	--	--	1,167	1,171	6,871	17,702	13,618
Poletimber	132,909	--	--	--	633	6,425	12,390	5,869
Sapling & seedling	47,812	243	2,658	6,124	7,026	15,733	8,838	4,248
All stands	452,469	243	2,658	7,291	8,830	29,029	38,930	23,735
Aspen								
Sawtimber	37,978	--	--	--	--	--	2,578	--
Poletimber	29,581	--	850	--	--	1,466	3,250	2,667
Sapling & seedling	9,084	271	--	--	2,462	5,836	515	--
All stands	76,643	271	850	--	2,462	7,302	6,343	2,667
Paper birch								
Sawtimber	25,131	--	--	--	--	--	2,929	4,935
Poletimber	32,775	--	--	--	--	4,219	--	--
Sapling & seedling	3,676	--	--	--	1,079	--	--	2,597
All stands	61,582	--	--	--	1,079	4,219	2,929	7,532
Exotic								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Nonstocked	4,484	--	--	180	--	--	1,560	692
All types								
Sawtimber	1,325,944	--	--	5,030	11,029	23,659	60,438	60,738
Poletimber	475,987	--	850	--	2,136	13,212	30,753	20,739
Sapling & seedling	129,256	658	6,149	14,058	18,208	27,301	22,277	13,791
Nonstocked	4,484	--	--	180	--	--	1,560	692
All stands	1,935,671	658	6,999	19,268	31,373	64,172	115,028	95,960

(Table 36 continued on next page)

(Table 36 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Oak-hickory							
Sawtimber	82,574	113,834	89,300	241,494	188,348	72,946	7,782
Poletimber	18,148	26,540	27,443	57,042	31,547	10,562	9,500
Sapling & seedling	2,490	3,837	3,403	7,824	4,103	--	--
All stands	103,212	144,211	120,146	306,360	223,998	83,508	17,282
Elm-ash-soft maple							
Sawtimber	2,402	14,903	7,243	23,887	15,974	5,918	--
Poletimber	2,990	--	--	7,697	--	--	--
Sapling & seedling	--	--	--	--	2,215	--	--
All stands	5,392	14,903	7,243	31,584	18,189	5,918	--
Maple-birch							
Sawtimber	32,004	23,205	24,016	105,652	42,460	3,882	--
Poletimber	14,310	19,486	2,746	38,826	24,937	7,287	--
Sapling & seedling	2,942	--	--	--	--	--	--
All stands	49,256	42,691	26,762	144,478	67,397	11,169	--
Aspen							
Sawtimber	4,036	6,378	--	5,584	19,402	--	--
Poletimber	2,829	--	8,859	4,281	5,379	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	6,865	6,378	8,859	9,865	24,781	--	--
Paper birch							
Sawtimber	2,789	5,663	--	--	--	--	8,815
Poletimber	7,244	2,268	2,664	3,083	13,297	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	10,033	7,931	2,664	3,083	13,297	--	8,815
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Nonstocked	1,463	--	--	589	--	--	--
All types							
Sawtimber	123,805	166,698	120,559	376,617	270,094	90,680	16,597
Poletimber	48,932	55,727	41,712	113,176	89,311	23,867	35,572
Sapling & seedling	5,432	3,837	3,403	7,824	6,318	--	--
Nonstocked	1,463	--	--	589	--	--	--
All stands	179,632	226,262	165,674	498,206	365,723	114,547	52,169

Table 37.--Net volume of sawtimber on commercial forest land by forest type, stand-size class, and basal-area class, Southwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Forest type and stand-size class	All classes	Basal-area class (square feet per acre)						
		0-10	11-20	21-30	31-40	41-50	51-60	61-70
Jack pine								
Sawtimber	26,241	--	--	--	--	--	--	--
Poletimber	4,173	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	30,414	--	--	--	--	--	--	--
Red pine								
Sawtimber	33,249	--	--	--	--	--	--	--
Poletimber	27,774	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	61,023	--	--	--	--	--	--	--
White pine								
Sawtimber	16,005	--	--	--	16,005	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	16,005	--	--	--	16,005	--	--	--
Balsam fir								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
White spruce								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Black spruce								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Northern white-cedar								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--

(Table 37 continued on next page)

[1/] International 1/4-inch rule.

(Table 37 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine							
Sawtimber	--	10,862	--	--	15,379	--	--
Poletimber	--	--	--	--	4,173	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	10,862	--	--	19,552	--	--
Red pine							
Sawtimber	--	--	--	--	--	33,249	--
Poletimber	--	7,073	--	--	7,458	--	13,243
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	7,073	--	--	7,458	33,249	13,243
White pine							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Balsam fir							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
White spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Black spruce							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Northern white-cedar							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--

(Table 37 continued on next page)

(Table 37 continued)

Forest type and stand-size class	All classes	Basal-area class (square feet per acre) 0-10	11-20	21-30	31-40	41-50	51-60	61-70
Tamarack								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Oak-hickory								
Sawtimber	3,375,835	--	--	19,407	26,688	60,294	135,154	176,859
Poletimber	321,623	--	--	--	3,871	1,841	16,567	22,666
Sapling & seedling	158,210	966	5,400	13,182	18,315	10,751	34,532	14,062
All stands	3,855,668	966	5,400	32,589	48,874	72,886	186,253	213,587
Elm-ash-soft maple								
Sawtimber	299,601	--	--	--	4,734	10,040	26,713	--
Poletimber	18,361	--	--	--	--	--	7,089	--
Sapling & seedling	35,824	--	6,652	6,579	5,182	6,755	3,582	--
All stands	353,786	--	6,652	6,579	9,916	16,795	37,384	--
Maple-birch								
Sawtimber	1,004,702	--	--	4,679	5,798	29,554	62,414	53,461
Poletimber	230,176	--	--	--	--	12,068	17,438	7,966
Sapling & seedling	168,214	1,124	11,155	22,112	22,750	54,261	31,643	14,213
All stands	1,403,092	1,124	11,155	26,791	28,548	95,883	111,495	75,640
Aspen								
Sawtimber	113,451	--	--	--	--	--	7,897	--
Poletimber	36,323	--	1,035	--	--	3,536	4,790	--
Sapling & seedling	11,092	--	--	--	2,381	8,711	--	--
All stands	160,866	--	1,035	--	2,381	12,247	12,687	--
Paper birch								
Sawtimber	85,502	--	--	--	--	--	9,855	18,648
Poletimber	50,303	--	--	--	--	7,579	--	--
Sapling & seedling	9,338	--	--	--	1,018	--	--	8,320
All stands	145,143	--	--	--	1,018	7,579	9,855	26,968
Exotic								
Sawtimber	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--
Nonstocked	13,116	--	--	1,074	--	--	5,274	3,329
All types								
Sawtimber	4,954,586	--	--	24,086	53,225	99,888	242,033	248,968
Poletimber	688,733	--	1,035	--	3,871	25,024	45,884	30,632
Sapling & seedling	382,678	2,090	23,207	41,873	49,646	80,478	69,757	36,595
Nonstocked	13,116	--	--	1,074	--	--	5,274	3,329
All stands	6,039,113	2,090	24,242	67,033	106,742	205,390	362,948	319,524

(Table 37 continued)

Forest type and stand-size class	Basal-area class (square feet per acre)						
	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Oak-hickory							
Sawtimber	310,591	452,847	338,732	870,720	671,464	281,919	31,160
Poletimber	23,281	26,789	58,381	91,449	56,314	3,562	16,902
Sapling & seedling	4,437	6,836	6,555	31,964	11,210	--	--
All stands	338,309	486,472	403,668	994,133	738,988	285,481	48,062
Elm-ash-soft maple							
Sawtimber	9,940	54,045	29,964	86,746	61,859	15,560	--
Poletimber	--	--	--	11,272	--	--	--
Sapling & seedling	--	--	--	--	7,074	--	--
All stands	9,940	54,045	29,964	98,018	68,933	15,560	--
Maple-birch							
Sawtimber	114,427	90,507	98,191	393,196	140,778	11,697	--
Poletimber	30,628	33,921	5,356	64,403	42,391	16,005	--
Sapling & seedling	10,956	--	--	--	--	--	--
All stands	156,011	124,428	103,547	457,599	183,169	27,702	--
Aspen							
Sawtimber	14,878	21,973	--	3,578	65,125	--	--
Poletimber	7,037	--	4,315	9,749	5,861	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	21,915	21,973	4,315	13,327	70,986	--	--
Paper birch							
Sawtimber	8,497	19,936	--	--	--	--	28,566
Poletimber	9,832	4,324	5,759	5,415	17,394	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	18,329	24,260	5,759	5,415	17,394	--	28,566
Exotic							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--
Nonstocked	3,439	--	--	--	--	--	--
All types							
Sawtimber	458,333	650,170	466,887	1,354,240	954,605	342,425	59,726
Poletimber	70,778	72,107	73,811	182,288	133,591	19,567	30,145
Sapling & seedling	15,393	6,836	6,555	31,964	18,284	--	--
Nonstocked	3,439	--	--	--	--	--	--
All stands	547,943	729,113	547,253	1,568,492	1,106,480	361,992	89,871

Table 38.--Net volume of sawtimber on commercial forest land by species group and butt log grade, Southwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All grades	Log grade 1	2	3	Tie and timber
Softwoods					
Jack pine	19,028	458	1,428	17,142	--
Red pine	73,260	--	--	73,260	--
White pine	57,982	22,207	18,254	17,521	--
White spruce	--	--	--	--	--
Black spruce	--	--	--	--	--
Balsam fir	--	--	--	--	--
Hemlock	--	--	--	--	--
Tamarack	--	--	--	--	--
Eastern redcedar	1,837	--	--	1,837	--
Northern white-cedar	--	--	--	--	--
Other softwoods	--	--	--	--	--
Total	152,107	22,665	19,682	109,760	--
Hardwoods					
White oak	1,037,655	40,616	307,218	567,994	121,827
Select red oak	1,698,953	341,148	537,039	768,729	52,037
Other red oak	657,420	--	110,002	495,536	51,882
Select hickory	161,696	--	43,502	92,797	25,397
Other hickory	29,895	--	--	29,895	--
Basswood	387,042	88,897	63,495	225,122	9,528
Beech	--	--	--	--	--
Yellow birch	3,262	--	685	2,228	349
Hard maple	425,061	56,759	106,456	246,465	15,381
Soft maple	265,802	52,012	32,962	145,494	35,334
Elm	228,878	43,356	51,805	112,698	21,019
Black ash	30,886	--	--	30,886	--
White & green ash	131,000	--	44,455	86,545	--
Cottonwood	73,983	23,441	4,175	42,115	4,252
Willow	19,288	--	15,364	3,924	--
Hackberry	4,632	906	574	2,536	616
Balsam poplar	6,428	--	--	6,428	--
Bigtooth aspen	250,507	--	10,357	240,150	--
Quaking aspen	136,605	--	--	136,605	--
Paper birch	115,121	--	22,837	83,678	8,606
River birch	13,929	--	--	13,929	--
Black cherry	66,409	--	--	66,409	--
Black walnut	59,651	--	--	59,651	--
Butternut	60,829	--	12,729	48,100	--
Other hardwoods	22,074	--	8,987	13,087	--
Total	5,887,006	647,135	1,372,642	3,521,001	346,228
All species	6,039,113	669,800	1,392,324	3,630,761	346,228

[1/] International 1/4-inch rule.

Table 39.--Net volume of short-log trees on commercial forest land by species group and diameter class, Southwest Unit, Wisconsin, 1983

(In thousand cubic feet)

Species group	All classes	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-28.9	29.0-38.9	39.0+
Softwoods											
Jack pine	170	--	170	--	--	--	--	--	--	--	--
Red pine	--	--	--	--	--	--	--	--	--	--	--
White pine	--	--	--	--	--	--	--	--	--	--	--
White spruce	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	170	--	170	--	--	--	--	--	--	--	--
Hardwoods											
White oak	32,644	--	4,286	7,484	6,056	3,723	2,614	3,421	3,489	1,571	--
Select red oak	24,646	--	--	3,309	5,650	2,250	2,817	2,762	5,257	2,601	--
Other red oak	20,934	--	436	2,696	5,030	4,792	1,637	1,886	3,990	467	--
Select hickory	1,724	--	438	310	752	224	--	--	--	--	--
Other hickory	246	--	246	--	--	--	--	--	--	--	--
Basswood	5,076	--	--	1,373	630	619	522	216	482	205	1,029
Beech	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	9,938	--	--	1,629	1,069	2,780	1,273	1,156	856	1,175	--
Soft maple	5,649	--	733	668	1,148	554	718	390	492	809	137
Elm	8,568	--	1,133	1,679	2,017	219	1,569	441	512	998	--
Black ash	257	--	--	257	--	--	--	--	--	--	--
White & green ash	2,020	--	215	--	573	442	233	--	557	--	--
Cottonwood	734	--	--	--	--	--	--	--	473	--	261
Willow	788	--	194	--	338	--	--	--	256	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	1,719	--	--	537	341	841	--	--	--	--	--
Quaking aspen	--	--	--	--	--	--	--	--	--	--	--
Paper birch	2,161	--	991	917	--	--	253	--	--	--	--
River birch	645	--	--	--	365	--	280	--	--	--	--
Black cherry	1,647	--	--	559	873	--	--	215	--	--	--
Black walnut	478	--	200	--	--	278	--	--	--	--	--
Butternut	1,990	--	146	417	1,012	202	--	--	213	--	--
Other hardwoods	1,399	--	215	538	254	254	--	--	138	--	--
Total	123,263	--	9,233	22,373	26,108	17,178	11,916	10,487	16,715	7,826	1,427
All species	123,433	--	9,403	22,373	26,108	17,178	11,916	10,487	16,715	7,826	1,427

Table 40.--Net volume of short-log trees on commercial forest land by species group and diameter class, Southwest Unit, Wisconsin, 1983

(In thousand board feet)[1/]

Species group	All classes	Diameter class (inches at breast height) 9.0 10.9	11.0- 12.9	13.0- 14.9	15.0- 16.9	17.0- 18.9	19.0- 20.9	21.0- 22.9	23.0- 28.9	29.0- 38.9	39.0+
Softwoods											
Jack pine	586	--	586	--	--	--	--	--	--	--	--
Red pine	--	--	--	--	--	--	--	--	--	--	--
White pine	--	--	--	--	--	--	--	--	--	--	--
White spruce	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--
Eastern redcedar	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--
Total	586	--	586	--	--	--	--	--	--	--	--
Hardwoods											
White oak	86,141	--	12,390	20,198	15,981	9,513	6,614	8,625	8,839	3,981	--
Select red oak	55,877	--	--	7,308	12,501	5,061	6,369	6,329	12,182	6,127	--
Other red oak	47,614	--	960	5,966	11,293	10,835	3,730	4,369	9,345	1,116	--
Select hickory	4,581	--	1,173	921	1,909	578	--	--	--	--	--
Other hickory	688	--	688	--	--	--	--	--	--	--	--
Basswood	11,204	--	--	2,908	1,362	1,334	1,142	481	1,086	469	2,422
Beech	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--
Hard maple	24,768	--	--	3,890	2,589	6,820	3,182	2,946	2,219	3,122	--
Soft maple	14,910	--	2,131	1,836	3,066	1,439	1,833	995	1,225	2,033	352
Elm	21,817	--	2,751	4,143	5,012	552	4,066	1,157	1,373	2,763	--
Black ash	738	--	--	738	--	--	--	--	--	--	--
White & green ash	4,597	--	543	--	1,328	1,011	518	--	1,197	--	--
Cottonwood	2,451	--	--	--	--	--	--	--	1,538	--	913
Willow	2,385	--	559	--	1,002	--	--	--	824	--	--
Hackberry	--	--	--	--	--	--	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	2,890	--	--	874	574	1,442	--	--	--	--	--
Quaking aspen	--	--	--	--	--	--	--	--	--	--	--
Paper birch	5,886	--	2,654	2,495	--	--	737	--	--	--	--
River birch	2,121	--	--	--	1,190	--	931	--	--	--	--
Black cherry	4,245	--	--	1,522	2,196	--	--	527	--	--	--
Black walnut	1,295	--	573	--	--	722	--	--	--	--	--
Butternut	5,362	--	515	1,190	2,640	499	--	--	518	--	--
Other hardwoods	5,028	--	815	1,885	896	908	--	--	524	--	--
Total	304,598	--	25,752	55,874	63,539	40,714	29,122	25,429	40,870	19,611	3,687
All species	305,184	--	26,338	55,874	63,539	40,714	29,122	25,429	40,870	19,611	3,687

[1/] International 1/4-inch rule.

Table 41.--Net annual growth of growing stock on commercial forest land by softwoods and hardwoods, Southwest Unit, Wisconsin, 1967 and 1982

(In thousand cubic feet)

Species	1967	1982
Softwoods	976	5,520
Hardwoods	36,748	44,709
All species	37,724	50,229

Table 42.--Net annual growth of growing stock on commercial forest land by species group and county, Southwest Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All counties	County							
		Buffalo	Crawford	Dunn	Grant	Iowa	La Crosse	Lafayette	Pepin
Softwoods									
Jack pine	193	--	--	77	--	--	78	--	--
Red pine	4,659	328	--	1,468	--	11	233	--	--
White pine	508	--	--	46	33	63	89	--	8
White spruce	23	--	--	--	--	--	--	--	--
Black spruce	38	--	--	--	--	--	--	--	--
Balsam fir	3	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--
Eastern redcedar	96	--	--	--	18	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--
Total	5,520	328	--	1,591	51	74	400	--	8
Hardwoods									
White oak	5,072	307	439	339	780	659	315	154	68
Select red oak	8,644	1,119	819	977	739	365	770	40	201
Other red oak	4,184	629	530	437	561	153	148	85	7
Select hickory	1,927	237	347	--	158	162	234	9	--
Other hickory	1,909	3	195	64	97	125	38	11	--
Basswood	3,570	113	356	229	330	267	198	71	143
Beech	--	--	--	--	--	--	--	--	--
Yellow birch	38	--	--	28	--	--	--	--	--
Hard maple	3,102	21	433	222	306	94	--	--	55
Soft maple	2,740	110	516	575	136	73	70	--	92
Elm	-886	33	-217	17	-227	149	20	-118	-185
Black ash	465	--	82	110	22	144	21	--	13
White & green ash	1,417	113	172	139	49	80	--	16	46
Cottonwood	474	67	3	-15	34	22	89	--	34
Willow	191	--	49	-43	--	-14	24	--	25
Hackberry	87	9	--	--	9	--	11	--	--
Balsam poplar	62	17	--	--	--	--	--	--	--
Bigtooth aspen	1,907	404	179	194	4	120	191	--	113
Quaking aspen	2,607	499	3	241	767	254	191	24	6
Paper birch	2,689	680	122	241	137	66	168	--	136
River birch	139	-3	3	--	97	32	9	--	17
Black cherry	2,221	372	57	25	289	206	101	108	14
Black walnut	438	--	69	4	158	104	--	21	--
Butternut	809	15	-10	34	140	34	23	--	21
Other hardwoods	903	219	22	--	10	59	19	--	13
Total	44,709	4,964	4,169	3,818	4,596	3,154	2,640	421	819
All species	50,229	5,292	4,169	5,409	4,647	3,228	3,040	421	827

(Table 42 continued on the next page)

(Table 42 continued)

Species group	County					
	Pierce	Richland	St. Croix	Sauk	Trempealeau	Vernon
Softwoods						
Jack pine	--	--	--	38	--	--
Red pine	72	--	1,072	180	1,295	--
White pine	--	--	--	59	141	69
White spruce	--	--	23	--	--	--
Black spruce	--	--	--	38	--	--
Balsam fir	--	--	--	3	--	--
Hemlock	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--
Eastern redcedar	--	--	--	8	70	--
Northern white-cedar	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--
Total	72	--	1,095	326	1,506	69
Hardwoods						
White oak	95	437	98	367	302	712
Select red oak	225	552	122	1,226	656	833
Other red oak	77	171	107	335	727	217
Select hickory	--	247	--	205	73	255
Other hickory	272	642	11	178	66	207
Basswood	190	430	79	368	92	704
Beech	--	--	--	--	--	--
Yellow birch	--	--	--	10	--	--
Hard maple	655	648	26	137	--	505
Soft maple	--	205	--	735	168	60
Elm	-148	-88	-156	61	-3	-24
Black ash	--	18	55	-9	-12	21
White & green ash	156	221	104	106	7	208
Cottonwood	92	50	8	--	51	39
Willow	--	-7	--	--	157	--
Hackberry	--	54	--	-4	--	8
Balsam poplar	--	--	--	--	45	--
Bigtooth aspen	48	155	43	332	175	-51
Quaking aspen	50	-6	259	14	-37	342
Paper birch	85	130	328	40	406	150
River birch	--	--	--	--	-16	--
Black cherry	102	87	-27	457	168	262
Black walnut	--	21	--	--	--	61
Butternut	255	235	5	14	--	43
Other hardwoods	54	65	239	--	30	173
Total	2,208	4,267	1,301	4,572	3,055	4,725
All species	2,280	4,267	2,396	4,898	4,561	4,794

Table 43.--Net annual growth of sawtimber on commercial forest land by species group and county, Southwest Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All counties	County							
		Buffalo	Crawford	Dunn	Grant	Iowa	La Crosse	Lafayette	Pepin
Softwoods									
Jack pine	951	--	--	311	--	--	640	--	--
Red pine	6,865	187	--	2,882	--	--	2,151	--	--
White pine	1,834	--	--	194	203	318	579	--	43
White spruce	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--
Eastern redcedar	105	--	--	--	63	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--
Total	9,755	187	--	3,387	266	318	3,370	--	43
Hardwoods									
White oak	26,203	1,630	1,816	2,046	4,563	2,726	1,299	882	225
Select red oak	42,851	4,829	3,643	4,062	3,665	1,681	4,548	208	963
Other red oak	19,558	2,742	1,449	850	2,734	572	1,243	484	92
Select hickory	6,446	730	461	--	489	759	613	13	--
Other hickory	2,165	13	306	--	78	23	253	--	--
Basswood	15,119	442	1,894	975	1,125	890	671	157	490
Beech	--	--	--	--	--	--	--	--	--
Yellow birch	85	--	--	68	--	--	--	--	--
Hard maple	12,036	105	912	1,157	1,521	211	--	--	285
Soft maple	7,818	669	1,384	1,638	666	115	234	--	283
Elm	-3,154	1,047	-1,152	81	-672	524	886	-651	-1,278
Black ash	1,111	--	40	345	284	--	29	--	-29
White & green ash	7,112	1,629	634	779	425	81	--	54	194
Cottonwood	2,143	253	14	-68	148	104	236	--	124
Willow	1,055	--	935	-183	--	29	--	--	111
Hackberry	251	--	--	--	--	--	--	--	--
Balsam poplar	428	130	--	--	--	--	--	--	--
Bigtooth aspen	6,719	1,523	515	1,440	198	334	-297	--	798
Quaking aspen	7,099	2,322	187	381	71	--	215	77	246
Paper birch	5,870	1,444	634	578	176	352	108	--	136
River birch	266	6	21	--	17	38	113	--	142
Black cherry	3,868	696	--	150	25	240	227	116	--
Black walnut	3,057	--	297	--	1,906	371	--	--	--
Butternut	3,200	-46	132	301	--	56	294	--	33
Other hardwoods	1,631	139	876	--	63	176	66	--	102
Total	172,937	20,303	14,998	14,600	17,482	9,282	10,738	1,340	2,917
All species	182,692	20,490	14,998	17,987	17,748	9,600	14,108	1,340	2,960

[1/] International 1/4-inch rule.

(Table 43 continued)

Species group	County					
	Pierce	Richland	St. Croix	Sauk	Trempealeau	Vernon
Softwoods						
Jack pine	--	--	--	--	--	--
Red pine	237	--	1,147	261	--	--
White pine	--	--	--	284	--	213
White spruce	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--
Eastern redcedar	--	--	--	42	--	--
Northern white-cedar	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--
Total	237	--	1,147	587	--	213
Hardwoods						
White oak	292	1,707	134	3,966	1,485	3,432
Select red oak	1,469	2,362	837	6,039	3,560	4,985
Other red oak	392	1,001	469	1,616	4,583	1,331
Select hickory	--	1,061	--	1,324	19	977
Other hickory	238	112	--	994	--	148
Basswood	965	1,837	1,230	1,170	246	3,027
Beech	--	--	--	--	--	--
Yellow birch	--	--	--	17	--	--
Hard maple	2,720	2,500	123	260	--	2,242
Soft maple	--	965	--	983	786	95
Elm	223	-685	-429	-268	-393	-387
Black ash	--	--	458	-48	--	32
White & green ash	1,338	1,385	30	28	28	507
Cottonwood	435	237	28	--	197	435
Willow	--	-35	--	--	198	--
Hackberry	--	316	--	-65	--	--
Balsam poplar	--	--	--	--	298	--
Bigtooth aspen	218	766	518	400	555	-249
Quaking aspen	190	66	1,924	1,049	371	--
Paper birch	333	47	354	19	1,779	-90
River birch	--	--	--	--	-71	--
Black cherry	19	133	--	207	1,609	446
Black walnut	--	--	--	--	--	483
Butternut	1,445	417	--	139	--	429
Other hardwoods	131	62	16	--	--	--
Total	10,408	14,254	5,692	17,830	15,250	17,843
All species	10,645	14,254	6,839	18,417	15,250	18,056

Table 44.--Net annual growth of growing stock on commercial forest land by ownership class and softwoods and hardwoods, Southwest Unit, Wisconsin, 1982

Ownership class	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	- - - - Thousand cubic feet - - - -			- - - Thousand board feet[1] - - -		
National Forest	--	--	--	--	--	--
Miscellaneous federal	258	--	258	1,253	--	1,253
State	369	--	369	1,957	--	1,957
County and municipal	89	77	12	1,690	261	1,429
Indian	--	--	--	--	--	--
Forest industry	--	--	--	--	--	--
Farmer	33,586	2,471	31,115	123,556	6,139	117,417
Misc. private-corp.	2,157	189	1,968	8,071	1,332	6,739
Misc. private-indiv.	13,770	2,783	10,987	46,165	2,023	44,142
All owners	50,229	5,520	44,709	182,692	9,755	172,937

[1] International 1/4-inch rule.

Table 45.--Net annual growth of growing stock on commercial forest land by species group and type, Southwest Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	193	145	39	--	--	--	--	--
Red pine	4,659	39	4,188	--	--	--	--	--
White pine	508	29	16	230	--	--	--	--
White spruce	23	--	23	--	--	--	--	--
Black spruce	38	--	38	--	--	--	--	--
Balsam fir	3	--	3	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	96	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	5,520	213	4,307	230	--	--	--	--
Hardwoods								
White oak	5,072	--	--	--	--	--	--	--
Select red oak	8,644	--	28	--	--	--	--	--
Other red oak	4,184	5	8	--	--	--	--	--
Select hickory	1,927	--	--	--	--	--	--	--
Other hickory	1,909	--	--	--	--	--	--	--
Basswood	3,570	--	--	--	--	--	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	38	--	--	--	--	--	--	--
Hard maple	3,102	--	--	--	--	--	--	--
Soft maple	2,740	--	--	--	--	--	--	--
Elm	-886	13	--	--	--	--	--	--
Black ash	465	--	--	--	--	--	--	--
White & green ash	1,417	--	--	--	--	--	--	--
Cottonwood	474	--	--	8	--	--	--	--
Willow	191	--	--	--	--	--	--	--
Hackberry	87	--	--	--	--	--	--	--
Balsam poplar	62	--	--	--	--	--	--	--
Bigtooth aspen	1,907	--	--	--	--	--	--	--
Quaking aspen	2,607	13	-27	--	--	--	--	--
Paper birch	2,689	--	--	--	--	--	--	--
River birch	139	--	--	--	--	--	--	--
Black cherry	2,221	--	2	--	--	--	--	--
Black walnut	438	--	--	--	--	--	--	--
Butternut	809	--	--	--	--	--	--	--
Other hardwoods	903	--	12	--	--	--	--	--
Total	44,709	31	23	8	--	--	--	--
All species	50,229	244	4,330	238	--	--	--	--

(Table 45 continued on next page)

(Table 45 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	--	9	--	--	--	--	--	--
Red pine	--	406	--	26	--	--	--	--
White pine	--	91	--	134	8	--	--	--
White spruce	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	--	70	--	26	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	--	576	--	186	8	--	--	--
Hardwoods								
White oak	--	4,300	165	524	39	28	--	16
Select red oak	--	6,980	--	1,340	66	221	--	9
Other red oak	--	3,926	49	129	27	7	--	33
Select hickory	--	1,611	--	215	--	101	--	--
Other hickory	--	990	19	839	61	--	--	--
Basswood	--	1,477	34	2,004	27	19	--	9
Beech	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	33	5	--	--	--
Hard maple	--	649	--	2,444	--	9	--	--
Soft maple	--	736	1,329	645	14	16	--	--
Elm	--	-80	-792	80	26	-39	--	-94
Black ash	--	57	343	65	--	--	--	--
White & green ash	--	356	251	726	77	--	--	7
Cottonwood	--	124	169	95	78	--	--	--
Willow	--	--	149	11	24	--	--	7
Hackberry	--	9	30	48	--	--	--	--
Balsam poplar	--	45	--	--	--	17	--	--
Bigtooth aspen	--	596	10	478	764	59	--	--
Quaking aspen	--	818	--	307	1,470	40	--	-14
Paper birch	--	1,230	51	236	132	1,040	--	--
River birch	--	5	134	--	--	--	--	--
Black cherry	--	1,271	7	908	--	33	--	--
Black walnut	--	328	--	98	--	--	--	12
Butternut	--	438	--	366	--	--	--	5
Other hardwoods	--	248	275	343	19	6	--	--
Total	--	26,114	2,223	11,934	2,829	1,557	--	-10
All species	--	26,690	2,223	12,120	2,837	1,557	--	-10

Table 46.--Net annual growth of sawtimber on commercial forest land by species group and type, Southwest Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	951	899	52	--	--	--	--	--
Red pine	6,865	261	5,000	--	--	--	--	--
White pine	1,834	168	84	579	--	--	--	--
White spruce	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	105	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	9,755	1,328	5,136	579	--	--	--	--
Hardwoods								
White oak	26,203	--	--	--	--	--	--	--
Select red oak	42,851	--	--	--	--	--	--	--
Other red oak	19,558	27	36	--	--	--	--	--
Select hickory	6,446	--	--	--	--	--	--	--
Other hickory	2,165	--	--	--	--	--	--	--
Basswood	15,119	--	--	--	--	--	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	85	--	--	--	--	--	--	--
Hard maple	12,036	--	--	--	--	--	--	--
Soft maple	7,818	--	--	--	--	--	--	--
Elm	-3,154	104	--	--	--	--	--	--
Black ash	1,111	--	--	--	--	--	--	--
White & green ash	7,112	--	--	--	--	--	--	--
Cottonwood	2,143	--	--	36	--	--	--	--
Willow	1,055	--	--	--	--	--	--	--
Hackberry	251	--	--	--	--	--	--	--
Balsam poplar	428	--	--	--	--	--	--	--
Bigtooth aspen	6,719	--	--	--	--	--	--	--
Quaking aspen	7,099	--	--	--	--	--	--	--
Paper birch	5,870	--	--	--	--	--	--	--
River birch	266	--	--	--	--	--	--	--
Black cherry	3,868	--	6	--	--	--	--	--
Black walnut	3,057	--	--	--	--	--	--	--
Butternut	3,200	--	--	--	--	--	--	--
Other hardwoods	1,631	--	66	--	--	--	--	--
Total	172,937	131	108	36	--	--	--	--
All species	182,692	1,459	5,244	615	--	--	--	--

[1/] International 1/4-inch rule.

(Table 46 continued on next page)

(Table 46 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotic	Non-stocked
Softwoods								
Jack pine	--	--	--	--	--	--	--	--
Red pine	--	457	--	1,147	--	--	--	--
White pine	--	362	--	641	--	--	--	--
White spruce	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	--	--	--	105	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	--	819	--	1,893	--	--	--	--
Hardwoods								
White oak	--	22,085	29	3,773	113	169	--	34
Select red oak	--	35,726	--	5,903	576	599	--	47
Other red oak	--	17,953	151	994	233	36	--	128
Select hickory	--	5,569	--	619	--	258	--	--
Other hickory	--	1,583	--	559	23	--	--	--
Basswood	--	5,852	174	8,088	958	--	--	47
Beech	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	59	26	--	--	--
Hard maple	--	2,288	--	9,748	--	--	--	--
Soft maple	--	1,227	4,975	1,543	--	73	--	--
Elm	--	1,135	-2,589	-1,937	640	-273	--	-234
Black ash	--	241	742	128	--	--	--	--
White & green ash	--	964	1,250	3,649	1,219	--	--	30
Cottonwood	--	580	987	403	137	--	--	--
Willow	--	--	986	40	--	--	--	29
Hackberry	--	--	156	95	--	--	--	--
Balsam poplar	--	298	--	--	--	130	--	--
Bigtooth aspen	--	3,210	51	885	2,150	423	--	--
Quaking aspen	--	2,389	--	1,960	1,953	797	--	--
Paper birch	--	1,653	176	63	177	3,801	--	--
River birch	--	74	192	--	--	--	--	--
Black cherry	--	1,327	--	2,496	--	39	--	--
Black walnut	--	1,654	--	1,374	--	--	--	29
Butternut	--	1,148	--	2,052	--	--	--	--
Other hardwoods	--	230	1,137	156	42	--	--	--
Total	--	107,186	8,417	42,650	8,247	6,052	--	110
All species	--	108,005	8,417	44,543	8,247	6,052	--	110

Table 47.--Net annual growth of growing stock on commercial forest land by forest type, stand-size class, and basal-area class, Southwest Unit, Wisconsin, 1982

(In thousand cubic feet)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine															
Sawtimber	167	--	--	--	--	--	--	--	--	70	--	--	97	--	--
Poletimber	77	--	--	--	--	--	--	--	--	--	--	--	77	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	244	--	--	--	--	--	--	--	--	70	--	--	174	--	--
Red pine															
Sawtimber	259	--	--	--	--	--	--	--	--	--	--	--	--	259	--
Poletimber	3,462	--	--	--	--	--	--	--	218	400	--	--	1,070	855	919
Sapling & seedling	609	--	174	--	--	--	435	--	--	--	--	--	--	--	--
All stands	4,330	--	174	--	--	--	435	--	218	400	--	--	1,070	1,114	919
White pine															
Sawtimber	97	--	--	--	97	--	--	--	--	--	--	--	--	--	--
Poletimber	141	--	--	--	--	--	--	--	--	--	--	141	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	238	--	--	--	97	--	--	--	--	--	--	141	--	--	--
Balsam fir															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White spruce															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

(Table 47 continued on next page)

(Table 47 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oak-hickory															
Sawtimber	17,650	--	--	135	168	351	687	857	1,546	2,554	1,650	4,959	3,480	1,136	127
Poletimber	6,964	--	--	--	101	151	425	460	738	887	771	1,884	839	402	306
Sapling & seedling	2,076	9	60	231	181	135	498	284	19	274	150	113	122	--	--
All stands	26,690	9	60	366	450	637	1,610	1,601	2,303	3,715	2,571	6,956	4,441	1,538	433
Elm-ash-soft maple															
Sawtimber	950	--	--	--	16	-31	215	--	39	281	198	85	113	34	--
Poletimber	710	--	--	--	--	--	215	--	137	--	--	358	--	--	--
Sapling & seedling	563	--	100	150	58	67	109	--	--	--	--	--	79	--	--
All stands	2,223	--	100	150	74	36	539	--	176	281	198	443	192	34	--
Maple-birch															
Sawtimber	5,744	--	--	77	--	132	394	282	797	530	314	2,202	944	72	--
Poletimber	4,909	--	--	--	26	210	716	64	471	780	87	1,384	1,007	164	--
Sapling & seedling	1,467	5	135	339	358	346	188	42	54	--	--	--	--	--	--
All stands	12,120	5	135	416	384	688	1,298	388	1,322	1,310	401	3,586	1,951	236	--
Aspen															
Sawtimber	748	--	--	--	--	--	70	--	41	207	--	257	173	--	--
Poletimber	1,185	--	445	--	--	50	148	40	41	--	319	70	72	--	--
Sapling & seedling	904	17	--	--	73	615	199	--	--	--	--	--	--	--	--
All stands	2,837	17	445	--	73	665	417	40	82	207	319	327	245	--	--
Paper birch															
Sawtimber	371	--	--	--	--	--	67	63	36	87	--	--	--	--	118
Poletimber	1,089	--	--	--	--	290	--	--	232	67	69	89	342	--	--
Sapling & seedling	97	--	--	--	40	--	--	57	--	--	--	--	--	--	--
All stands	1,557	--	--	--	40	290	67	120	268	154	69	89	342	--	118
Exotic															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	-10	--	--	7	--	--	-30	-12	9	--	--	16	--	--	--
All types															
Sawtimber	25,986	--	--	212	281	452	1,433	1,202	2,459	3,729	2,162	7,503	4,807	1,501	245
Poletimber	18,537	--	445	--	127	701	1,504	564	1,837	2,134	1,246	3,926	3,407	1,421	1,225
Sapling & seedling	5,716	31	469	720	710	1,163	1,429	383	73	274	150	113	201	--	--
Nonstocked	-10	--	--	7	--	--	-30	-12	9	--	--	16	--	--	--
All stands	50,229	31	914	939	1,118	2,316	4,336	2,137	4,378	6,137	3,558	11,558	8,415	2,922	1,470

Table 48.--Net annual growth of sawtimber on commercial forest land by forest type, stand-size class, and basal-area class, Southwest Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Jack pine															
Sawtimber	1,198	--	--	--	--	--	--	--	--	531	--	--	667	--	--
Poletimber	261	--	--	--	--	--	--	--	--	--	--	--	261	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	1,459	--	--	--	--	--	--	--	--	531	--	--	928	--	--
Red pine															
Sawtimber	2,217	--	--	--	--	--	--	--	--	--	--	--	--	2,217	--
Poletimber	3,027	--	--	--	--	--	--	--	--	1,332	--	--	1,285	--	410
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	5,244	--	--	--	--	--	--	--	--	1,332	--	--	1,285	2,217	410
White pine															
Sawtimber	615	--	--	--	615	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	615	--	--	--	615	--	--	--	--	--	--	--	--	--	--
Balsam fir															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White spruce															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

[1/] International 1/4-inch rule.

(Table 48 continued on next page)

(Table 48 continued)

Forest type and stand-size class	All classes	Basal area class (square feet per acre)													
		0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100	101-120	121-150	151-180	181+
Tamarack															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oak-hickory															
Sawtimber	89,129	--	--	735	932	1,959	2,537	4,951	9,683	14,512	8,979	24,095	14,814	5,210	722
Poletimber	12,280	--	--	--	258	40	43	1,145	668	471	2,580	3,839	2,135	130	971
Sapling & seedling	6,596	64	816	1,382	543	524	991	690	64	334	199	683	306	--	--
All stands	108,005	64	816	2,117	1,733	2,523	3,571	6,786	10,415	15,317	11,758	28,617	17,255	5,340	1,693
Elm-ash-soft maple															
Sawtimber	5,111	--	--	--	180	69	851	--	435	1,407	1,213	537	572	-153	--
Poletimber	510	--	--	--	--	--	220	--	--	--	--	290	--	--	--
Sapling & seedling	2,796	--	363	269	293	1,661	76	--	--	--	--	--	134	--	--
All stands	8,417	--	363	269	473	1,730	1,147	--	435	1,407	1,213	827	706	-153	--
Maple-birch															
Sawtimber	26,542	--	--	312	125	465	2,399	726	3,118	2,549	2,647	9,386	4,275	540	--
Poletimber	12,094	--	--	--	--	120	4,095	-947	656	1,414	242	2,997	2,791	726	--
Sapling & seedling	5,907	25	541	671	1,178	1,749	1,340	263	140	--	--	--	--	--	--
All stands	44,543	25	541	983	1,303	2,334	7,834	42	3,914	3,963	2,889	12,383	7,066	1,266	--
Aspen															
Sawtimber	4,771	--	--	--	--	--	1,287	--	398	979	--	-118	2,225	--	--
Poletimber	2,343	--	23	--	--	187	835	--	268	--	251	400	379	--	--
Sapling & seedling	1,133	--	--	--	20	1,113	--	--	--	--	--	--	--	--	--
All stands	8,247	--	23	--	20	1,300	2,122	--	666	979	251	282	2,604	--	--
Paper birch															
Sawtimber	2,782	--	--	--	--	--	342	763	291	662	--	--	--	--	724
Poletimber	3,062	--	--	--	--	528	--	--	1,122	125	258	119	910	--	--
Sapling & seedling	208	--	--	--	19	--	--	189	--	--	--	--	--	--	--
All stands	6,052	--	--	--	19	528	342	952	1,413	787	258	119	910	--	724
Exotic															
Sawtimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sapling & seedling	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All stands	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nonstocked	110	--	--	30	--	--	-57	71	66	--	--	--	--	--	--
All types															
Sawtimber	132,365	--	--	1,047	1,852	2,493	7,416	6,440	13,925	20,640	12,839	33,900	22,553	7,814	1,446
Poletimber	33,577	--	23	--	258	875	5,193	198	2,714	3,342	3,331	7,645	7,761	856	1,381
Sapling & seedling	16,640	89	1,720	2,322	2,053	5,047	2,407	1,142	204	334	199	683	440	--	--
Nonstocked	110	--	--	30	--	--	-57	71	66	--	--	--	--	--	--
All stands	182,692	89	1,743	3,399	4,163	8,415	14,959	7,851	16,909	24,316	16,369	42,228	30,754	8,670	2,827

Table 49.--Timber removals[1/] from growing stock on commercial forest land by species group and county, Southwest Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All counties	County													
		Buffalo	Crawford	Dunn	Grant	Iowa	La Crosse	Lafayette	Pepin	Pierce	Richland	St. Croix	Sauk	Trempealeau	Vernon
Softwoods															
Jack pine	315	--	--	230	--	--	3	--	--	--	--	--	82	--	--
Red pine	1,648	1	--	1,247	--	--	20	--	--	2	--	--	226	152	--
White pine	230	--	--	117	1	2/	2/	--	15	--	--	--	25	53	19
White spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	2,193	1	--	1,594	1	2/	23	--	15	2	--	--	333	205	19
Hardwoods															
White oak	3,972	361	283	258	703	348	208	54	141	72	214	25	534	339	432
Select red oak	10,627	1,585	761	966	645	384	818	3	462	247	463	195	1,849	988	1,261
Other red oak	4,981	969	300	335	459	323	389	24	14	82	192	58	392	1,068	376
Hickory	231	36	9	8	1	10	24	--	--	8	5	1	58	20	51
Basswood	1,293	144	33	191	61	28	19	1	54	246	90	35	222	82	87
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	39	--	--	26	--	--	--	--	--	--	--	--	13	--	--
Hard maple	1,234	36	71	214	44	13	--	--	68	248	219	--	129	--	192
Soft maple	1,208	156	62	152	73	14	219	--	62	--	49	--	190	131	100
Elm	1,729	161	79	200	258	261	45	1	59	169	131	168	80	43	74
Ash	411	49	28	72	17	10	10	--	22	32	85	6	24	14	42
Cottonwood	85	24	3	10	11	--	1	--	4	18	1	--	--	7	6
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	1,229	163	19	124	9	3	88	--	45	6	60	6	417	269	20
Quaking aspen	566	164	3	52	13	3	43	--	15	10	8	23	39	163	30
Paper birch	287	140	6	6	4	--	9	--	15	3	--	49	15	33	7
Black walnut	99	--	12	--	37	35	--	1	--	--	12	--	--	--	2
Other hardwoods[3/]	438	141	8	10	9	48	52	1	10	1	9	7	26	82	34
Total	28,429	4,129	1,677	2,624	2,344	1,480	1,925	85	971	1,142	1,538	573	3,988	3,239	2,714
All species	30,622	4,130	1,677	4,218	2,345	1,480	1,948	85	986	1,144	1,538	573	4,321	3,444	2,733

[1/] Removals in 1982 are trend-level removals.

[2/] Less than 500 cubic feet.

[3/] Includes black cherry and butternut.

Table 50.--Timber removals from sawtimber on commercial forest land by species group and county, Southwest Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All counties	County													
		Buffalo	Crawford	Dunn	Grant	Iowa	La Crosse	Lafayette	Pepin	Pierce	Richland	St. Croix	Sauk	Trempealeau	Vernon
Softwoods															
Jack pine	354	--	--	350	--	--	4	--	--	--	--	--	--	--	--
Red pine	1,464	5	--	1,202	--	--	37	--	--	3	--	--	217	--	--
White pine	854	--	--	580	5	1	1	--	84	--	--	--	86	--	97
White spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	2,672	5	--	2,132	5	1	42	--	84	3	--	--	303	--	97
Hardwoods															
White oak	18,124	1,488	1,352	1,206	3,393	1,697	1,025	287	600	312	1,109	90	1,918	1,574	2,073
Select red oak	49,484	7,745	3,999	5,175	3,065	1,883	4,406	16	2,040	1,122	2,290	373	6,009	4,956	6,405
Other red oak	21,004	4,550	1,067	1,015	1,693	1,375	1,630	81	62	400	893	228	1,853	4,574	1,583
Hickory	1,027	172	44	--	7	48	112	--	--	31	23	--	290	99	201
Basswood	5,216	666	137	920	274	133	94	4	217	1,177	429	36	390	321	418
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	2	--	--	1	--	--	--	--	--	--	--	--	1	--	--
Hard maple	6,206	119	361	1,119	211	71	--	--	316	1,326	1,181	--	467	--	1,035
Soft maple	3,545	623	5	423	169	21	571	--	140	--	98	--	514	544	437
Elm	6,436	492	309	921	1,002	737	195	5	209	775	494	439	305	208	345
Ash	1,875	113	135	330	82	49	50	--	85	154	470	26	108	68	205
Cottonwood	406	116	11	48	48	1	5	--	16	97	9	--	--	30	25
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	4,032	811	63	680	52	15	301	--	174	38	300	31	288	1,159	120
Quaking aspen	1,804	714	7	162	14	--	82	--	15	36	23	71	204	476	--
Paper birch	495	134	17	24	3	--	41	--	39	17	--	22	37	161	--
Black walnut	338	--	58	--	179	91	--	--	--	--	--	--	--	--	10
Other hardwoods[2/]	1,245	301	37	50	37	133	170	4	33	3	42	30	119	255	31
Total	121,239	18,044	7,602	12,074	10,229	6,254	8,682	397	3,946	5,488	7,361	1,346	12,503	14,425	12,888
All species	123,911	18,049	7,602	14,206	10,234	6,255	8,724	397	4,030	5,491	7,361	1,346	12,806	14,425	12,985

[1/] International 1/4-inch rule.

[2/] Includes black cherry and butternut.

Table 51.--Growing-stock average annual removals on commercial forest land by species group and county, Southwest Unit, Wisconsin, 1967-1982

(In thousand cubic feet per year)

Species group	All counties	County													
		Buffalo	Crawford	Dunn	Grant	Iowa	La Crosse	Lafayette	Pepin	Pierce	Richland	St. Croix	Sauk	Trempealeau	Vernon
Softwoods															
Jack pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Red pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods															
White oak	2,427	46	45	73	353	154	56	--	45	--	49	--	920	439	247
Select red oak	10,176	1,479	299	568	432	86	1,091	--	336	339	--	126	4,612	300	508
Other red oak	2,576	475	268	587	--	--	171	--	--	--	--	204	328	316	227
Hickory	93	40	--	--	--	--	--	--	--	--	--	--	43	--	10
Basswood	1,255	--	--	232	--	--	--	--	--	244	101	31	574	--	73
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	44	--	--	--	--	--	--	--	--	--	--	--	44	--	--
Hard maple	1,270	--	--	--	213	--	--	--	--	--	--	921	136	--	--
Soft maple	817	400	--	117	--	--	--	--	--	--	--	--	300	--	--
Elm	1,575	68	--	108	268	227	115	--	--	130	283	281	53	--	42
Ash	237	30	--	--	--	40	--	--	--	53	54	--	--	--	60
Cottonwood	73	--	--	--	--	--	--	--	--	--	73	--	--	--	--
Willow	24	24	--	--	--	--	--	--	--	--	--	--	--	--	--
Hackberry	51	--	--	--	--	--	--	--	--	--	51	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	764	--	--	89	--	--	--	--	--	--	214	--	399	--	62
Quaking aspen	86	--	--	86	--	--	--	--	--	--	--	--	--	--	--
Paper birch	176	128	--	--	--	--	--	--	--	--	--	48	--	--	--
River birch	66	66	--	--	--	--	--	--	--	--	--	--	--	--	--
Black cherry	54	--	--	--	--	--	--	--	--	--	--	--	--	31	23
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	8	--	--	--	--	--	--	--	--	--	--	--	--	--	8
Total	21,772	2,756	612	1,860	1,266	507	1,433	--	381	766	825	1,611	7,409	1,086	1,260
All species	21,772	2,756	612	1,860	1,266	507	1,433	--	381	766	825	1,611	7,409	1,086	1,260

Table 52.--Sawtimber average annual removals on commercial forest land by species group and county, Southwest Unit, Wisconsin, 1967-1982

(In thousand board feet per year)[1/]

Species group	All counties	County													
		Buffalo	Crawford	Dunn	Grant	Iowa	La Crosse	Lafayette	Pepin	Pierce	Richland	St. Croix	Sauk	Trempealeau	Vernon
Softwoods															
Jack pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Red pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
White spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwoods															
White oak	10,659	--	--	371	1,758	749	279	--	221	--	237	--	3,556	2,334	1,154
Select red oak	46,458	7,411	1,504	2,888	2,189	424	5,458	--	1,694	1,701	--	--	19,394	1,291	2,504
Other red oak	10,632	1,534	1,267	2,825	--	--	835	--	--	--	--	592	1,549	1,553	477
Hickory	440	204	--	--	--	--	--	--	--	--	--	--	236	--	--
Basswood	5,236	--	--	1,139	--	--	--	--	--	1,228	494	--	2,021	--	354
Beech	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Yellow birch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hard maple	6,253	--	--	--	1,136	--	--	--	--	--	--	4,608	509	--	--
Soft maple	2,144	--	--	628	--	--	--	--	--	--	--	--	1,516	--	--
Elm	6,401	--	--	474	1,249	997	508	--	--	591	1,234	1,114	234	--	--
Ash	1,090	--	--	--	--	216	--	--	--	270	324	--	--	--	280
Cottonwood	310	--	--	--	--	--	--	--	--	--	310	--	--	--	--
Willow	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hackberry	233	--	--	--	--	--	--	--	--	--	233	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bigtooth aspen	1,767	--	--	453	--	--	--	--	--	--	1,027	--	--	--	287
Quaking aspen	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Paper birch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
River birch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black cherry	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black walnut	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Butternut	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other hardwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total	91,623	9,149	2,771	8,778	6,332	2,386	7,080	--	1,915	3,790	3,859	6,314	29,015	5,178	5,056
All species	91,623	9,149	2,771	8,778	6,332	2,386	7,080	--	1,915	3,790	3,859	6,314	29,015	5,178	5,056

[1/] International 1/4-inch rule.

Table 53.--Timber removals from growing stock and sawtimber on commercial forest land by species group, Southwest Unit, Wisconsin, 1967 and 1982

Species group	Growing stock		Sawtimber	
	1967	1982	1967	1982
	Thousand cubic feet		Thousand board feet[1/]	
Softwoods				
Jack pine	55	315	121	354
Red pine	37	1,648	57	1,464
White pine	171	230	984	854
White spruce	--	--	--	--
Black spruce	--	--	--	--
Balsam fir	--	--	--	--
Hemlock	--	--	--	--
Tamarack	1	--	--	--
Northern white-cedar	--	--	--	--
Other softwoods	1	--	--	--
Total	265	2,193	1,162	2,672
Hardwoods				
White oak	3,819	3,972	10,310	18,124
Select red oak	9,703	10,627	38,247	49,484
Other red oak	3,589	4,981	10,921	21,004
Hickory	1,192	231	1,394	1,027
Basswood	1,816	1,293	6,305	5,216
Beech	--	--	--	--
Yellow birch	8	39	51	2
Hard maple	1,972	1,234	7,128	6,206
Soft maple	1,036	1,208	1,871	3,545
Elm	2,309	1,729	5,842	6,436
Ash	610	411	1,379	1,875
Cottonwood	215	85	642	406
Balsam poplar	3	--	2	--
Bigtooth aspen	815	1,229	1,179	4,032
Quaking aspen	1,327	566	2,179	1,804
Paper birch	634	287	621	495
Black walnut	258	99	1,446	338
Other hardwoods[2/]	279	438	1,246	1,245
Total	29,585	28,429	90,763	121,239
All species	29,850	30,622	91,925	123,911

[1/] International 1/4-inch rule.

[2/] Includes black cherry and butternut.

Table 54.--Timber removals from growing stock and sawtimber on commercial forest land by item and species category, Southwest Unit, Wisconsin, 1982

Item	Growing stock						Sawtimber					
	All species	Pine	Other softwoods	Aspen	Oak	Other hardwoods	All species	Pine	Other softwoods	Aspen	Oak	Other hardwoods
	Thousand cubic feet						Thousand board feet[1]					
Roundwood products												
Pulpwood[2]	1,274	1,028	--	32	124	90	1,363	1,035	--	61	152	115
Saw logs	17,851	265	--	581	13,505	3,500	93,830	1,028	--	2,670	71,977	18,155
Fuelwood	2,909	--	--	112	1,576	1,221	8,170	--	--	302	4,457	3,411
Posts	999	770	--	91	138	--	889	415	--	178	296	--
Veneer logs	518	--	--	3/	432	86	3,341	--	--	1	2,790	550
Poles	--	--	--	--	--	--	--	--	--	--	--	--
Other	709	--	--	422	94	193	3,710	--	--	2,005	706	999
Total	24,260	2,063	--	1,238	15,869	5,090	111,303	2,478	--	5,217	80,378	23,230
Logging residue	2,642	130	--	162	1,854	496	7,279	194	--	392	5,252	1,441
Other removals	3,720	--	--	395	1,857	1,468	5,329	--	--	227	2,982	2,120
All removals	30,622	2,193	--	1,795	19,580	7,054	123,911	2,672	--	5,836	88,612	26,791

1/ International 1/4-inch rule.

2/ Includes particleboard and waferboard bolts.

3/ Less than 500 cubic feet.

Table 55.--Annual mortality of growing stock on commercial forest land by softwoods and hardwoods, Southwest Unit, Wisconsin, 1967 and 1982

(In thousand cubic feet)

Species	1967	1982
Softwoods	188	114
Hardwoods	7,219	16,889
Total	7,407	17,003

Table 56.--Annual mortality of growing stock on commercial forest land by species group and cause, Southwest Unit, Wisconsin, 1982

(In thousand cubic feet)

Species group	All causes	Cause						
		Insects	Disease	Fire	Animals	Weather	Suppression	Unknown and other
Softwoods								
Jack pine	59	--	--	--	--	--	--	59
Red pine	--	--	--	--	--	--	--	--
White pine	48	14	1	--	--	--	--	33
White spruce	2	--	--	--	--	--	--	2
Black spruce	2	--	--	--	--	--	--	2
Balsam fir	3	--	--	--	--	--	--	3
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	--	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	114	14	1	--	--	--	--	99
Hardwoods								
White oak	874	--	47	2	--	64	12	749
Select red oak	2,197	--	118	--	32	293	2	1,752
Other red oak	1,183	--	16	--	--	159	--	1,008
Select hickory	111	--	--	--	--	39	--	72
Other hickory	79	--	--	--	--	--	--	79
Basswood	394	--	27	--	3	17	--	347
Beech	--	--	--	--	--	--	--	--
Yellow birch	3	--	--	--	--	--	--	3
Hard maple	331	--	16	--	--	73	--	242
Soft maple	407	--	4	--	--	28	--	375
Elm	6,187	19	5,146	--	--	69	23	930
Black ash	43	--	--	--	--	--	--	43
White & green ash	146	--	22	2	--	--	15	107
Cottonwood	80	--	--	--	--	2	--	78
Willow	112	--	3	--	--	--	--	109
Hackberry	17	--	--	--	--	--	--	17
Balsam poplar	--	--	--	--	--	--	--	--
Bigtooth aspen	1,845	--	102	--	--	78	--	1,665
Quaking aspen	1,777	--	156	--	9	56	--	1,556
Paper birch	335	--	66	--	--	41	42	186
River birch	68	--	--	2	--	--	--	66
Black cherry	299	--	12	--	15	2	--	270
Black walnut	79	--	1	--	1	--	--	77
Butternut	290	--	99	--	--	--	--	191
Other hardwoods	32	--	7	--	--	1	2	22
Total	16,889	19	5,842	6	60	922	96	9,944
All species	17,003	33	5,843	6	60	922	96	10,043

Table 57.--Annual mortality of sawtimber on commercial forest land by species group and cause, Southwest Unit, Wisconsin, 1982

(In thousand board feet)[1/]

Species group	All causes	Cause						
		Insects	Disease	Fire	Animals	Weather	Suppression	Unknown and other
Softwoods								
Jack pine	99	--	--	--	--	--	--	99
Red pine	--	--	--	--	--	--	--	--
White pine	187	53	4	--	--	--	--	130
White spruce	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	1	--	--	--	--	--	--	1
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	287	53	4	--	--	--	--	230
Hardwoods								
White oak	2,197	--	113	--	2	292	--	1,790
Select red oak	9,405	--	444	--	159	1,432	4	7,366
Other red oak	4,303	--	62	--	--	677	--	3,564
Select hickory	260	--	2	--	--	5	--	253
Other hickory	6	6	--	--	--	--	--	--
Basswood	1,298	--	133	--	5	--	--	1,160
Beech	--	--	--	--	--	--	--	--
Yellow birch	4	--	--	--	--	--	--	4
Hard maple	896	--	81	--	--	347	--	468
Soft maple	1,065	--	15	--	--	119	--	931
Elm	20,754	82	16,288	--	--	247	--	4,137
Black ash	144	--	--	--	--	--	--	144
White & green ash	376	--	114	--	--	--	--	262
Cottonwood	177	--	--	--	--	6	--	171
Willow	321	--	11	--	--	--	--	310
Hackberry	73	--	--	--	--	--	--	73
Balsam poplar	--	--	--	--	--	--	--	--
Bigtooth aspen	4,838	--	249	--	--	371	--	4,218
Quaking aspen	1,982	--	47	--	--	192	--	1,743
Paper birch	477	--	2	--	--	125	--	350
River birch	102	--	--	3	--	--	--	99
Black cherry	238	--	49	--	--	--	--	189
Black walnut	276	--	9	--	8	--	--	259
Butternut	475	--	123	--	--	--	--	352
Other hardwoods	31	--	13	--	--	--	--	18
Total	49,698	88	17,755	3	174	3,813	4	27,861
All species	49,985	141	17,759	3	174	3,813	4	28,091

[1/] International 1/4-inch rule.

Table 58.--Annual mortality of growing stock and sawtimber on commercial forest land by county and softwoods and hardwoods, Southwest Unit, Wisconsin, 1982

County	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	Thousand cubic feet			Thousand board feet[1]		
Buffalo	1,771	--	1,771	5,510	--	5,510
Crawford	1,754	--	1,754	4,922	--	4,922
Dunn	1,614	52	1,562	4,772	99	4,673
Grant	1,579	--	1,579	4,609	--	4,609
Iowa	515	20	495	1,569	119	1,450
La Crosse	1,445	18	1,427	3,462	--	3,462
Lafayette	344	--	344	1,364	--	1,364
Pepin	590	--	590	2,333	2	2,331
Pierce	872	--	872	2,742	--	2,742
Richland	1,346	--	1,346	4,327	--	4,327
St. Croix	702	2	700	1,347	--	1,347
Sauk	1,888	20	1,868	5,176	53	5,123
Trempealeau	919	--	919	2,593	--	2,593
Vernon	1,664	2	1,662	5,259	14	5,245
All counties	17,003	114	16,889	49,985	287	49,698

[1] International 1/4-inch rule.

Table 59.--Annual mortality of growing stock and sawtimber on commercial forest land by ownership class and softwoods and hardwoods, Southwest Unit, Wisconsin, 1982

Ownership class	Growing stock			Sawtimber		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	Thousand cubic feet			Thousand board feet[1]		
National Forest	--	--	--	--	--	--
Miscellaneous federal	687	--	687	2,004	--	2,004
State	466	--	466	1,349	--	1,349
County and municipal	39	--	39	159	--	159
Indian	--	--	--	--	--	--
Forest industry	--	--	--	--	--	--
Farmer	11,961	80	11,881	36,702	229	36,473
Misc. private-corp.	626	3	623	1,363	5	1,358
Misc. private-indiv.	3,224	31	3,193	8,408	53	8,355
All owners	17,003	114	16,889	49,985	287	49,698

[1] International 1/4-inch rule.

Table 60.--Output of timber products by product, softwoods and hardwoods, and source of material, Southwest Unit, Wisconsin, 1981

Product	Standard units	Total		Roundwood products				Plant byproducts	
				Growing stock		Non-growing stock			
		No. of units	Thousand cubic feet	No. of units	Thousand cubic feet	No. of units	Thousand cubic feet	No. of units	Thousand cubic feet
Pulpwood[1]									
Softwoods	Standard[2]	20,933	1,648	13,059	1,028	7,457	587	417	33
Hardwoods	cords	51,817	4,077	3,281	246	813	61	47,723	3,770
Total		72,750	5,725	16,340	1,274	8,270	648	48,140	3,803
Saw logs									
Softwoods	Thousand[3]	4,002	682	1,555	265	2,447	417	--	--
Hardwoods	board feet	108,379	18,957	100,541	17,586	7,838	1,371	--	--
Total		112,381	19,639	102,096	17,851	10,285	1,788	--	--
Veneer logs									
Softwoods	Thousand[3]	--	--	--	--	--	--	--	--
Hardwoods	board feet	3,566	574	3,218	518	348	56	--	--
Total		3,566	574	3,218	518	348	56	--	--
Fuelwood									
Softwoods	Standard[2]	5,439	382	--	--	2,969	209	2,470	173
Hardwoods	cords	415,455	29,056	41,599	2,909	320,735	22,429	53,121	3,718
Total		420,894	29,438	41,599	2,909	323,704	22,638	55,591	3,891
Posts									
Softwoods	Thousand	1,104	1,134	750	770	354	364	--	--
Hardwoods	pieces	367	367	229	229	138	138	--	--
Total		1,471	1,501	979	999	492	502	--	--
Poles									
Softwoods	Pieces	--	--	--	--	--	--	--	--
Hardwoods		--	--	--	--	--	--	--	--
Total		--	--	--	--	--	--	--	--
Other[4]									
Softwoods	Thousand	105	105	--	--	--	--	105	105
Hardwoods	cubic feet	3,075	3,075	709	709	26	26	2,340	2,340
Total		3,180	3,180	709	709	26	26	2,445	2,445
All products									
Softwoods	Thousand	--	3,951	--	2,063	--	1,577	--	311
Hardwoods	cubic feet	--	56,106	--	22,197	--	24,081	--	9,828
Total		--	60,057	--	24,260	--	25,658	--	10,139

[1] Includes roundwood and plant byproducts used for particleboard and waferboard.

[2] 128 cubic feet; includes wood, bark, and air space.

[3] International 1/4-inch rule.

[4] Other (industrial production) includes cabin logs, charcoal wood, shingle bolts, pilings, etc.

Table 61.--Output of roundwood products by product, softwoods and hardwoods, and source of material, Southwest Unit, Wisconsin, 1981

(In thousand cubic feet)

Product and species group	All sources	Growing-stock trees			Rough and rotten trees	Salvable dead trees	Other sources
		Total	Sawtimber	Poletimber			
Industrial products							
Saw logs							
Softwoods	682	265	252	13	35	104	278
Hardwoods	18,957	17,586	16,087	1,499	309	666	396
Subtotal	19,639	17,851	16,339	1,512	344	770	674
Veneer logs and bolts							
Softwoods	--	--	--	--	--	--	--
Hardwoods	574	518	518	--	56	--	--
Subtotal	574	518	518	--	56	--	--
Pulpwood[1/]							
Softwoods	1,615	1,028	475	553	83	155	349
Hardwoods	307	246	75	171	11	6	44
Subtotal	1,922	1,274	550	724	94	161	393
Cooperage							
Softwoods	--	--	--	--	--	--	--
Hardwoods	107	94	94	--	8	--	5
Subtotal	107	94	94	--	8	--	5
Piling							
Softwoods	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	--	--	--	--	--	--	--
Poles							
Softwoods	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	--	--	--	--	--	--	--
Mine timbers (Round)							
Softwoods	--	--	--	--	--	--	--
Hardwoods	--	--	--	--	--	--	--
Subtotal	--	--	--	--	--	--	--
Posts (Round and split)							
Softwoods	1,134	770	205	565	46	--	318
Hardwoods	367	229	96	133	69	--	69
Subtotal	1,501	999	301	698	115	--	387
Other							
Softwoods	--	--	--	--	--	--	--
Hardwoods	628	615	447	168	5	4	4
Subtotal	628	615	447	168	5	4	4
All industrial products							
Softwoods	3,431	2,063	932	1,131	164	259	945
Hardwoods	20,940	19,288	17,317	1,971	458	676	518
Total	24,371	21,351	18,249	3,102	622	935	1,463
Fuelwood							
Softwoods	209	--	--	--	--	29	180
Hardwoods	25,338	2,909	1,801	1,108	576	10,084	11,769
Total	25,547	2,909	1,801	1,108	576	10,113	11,949
All products							
Softwoods	3,640	2,063	932	1,131	164	288	1,125
Hardwoods	46,278	22,197	19,118	3,079	1,034	10,760	12,287
Total	49,918	24,260	20,050	4,210	1,198	11,048	13,412

[1/] Includes particleboard and waferboard bolts.

Table 62.--Timber products from roundwood by species group and product, Southwest Unit, Wisconsin, 1981

Species group	All products	Pulpwood[1]		Saw logs		Veneer logs	
	Thousand cubic feet	Standard cords[2]	Thousand cubic feet	Thousand board feet[3]	Thousand cubic feet	Thousand board feet[3]	Thousand cubic feet
Softwoods							
Jack pine	491	5,243	412	109	23	--	--
Red pine	2,344	13,626	1,077	486	81	--	--
White pine	792	1,584	122	3,404	578	--	--
White spruce	1	12	1	--	--	--	--
Black spruce	1	22	1	1	[4]	--	--
Balsam fir	11	29	2	--	--	--	--
Hemlock	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--
Northern white-cedar	[4]	--	--	2	[4]	--	--
Other softwoods	--	--	--	--	--	--	--
Total	3,640	20,516	1,615	4,002	682	--	--
Hardwoods							
White oak	6,165	533	42	16,389	2,868	172	26
Select red oak	13,692	1,005	79	44,824	7,852	1,926	314
Other red oak	6,016	441	35	19,697	3,450	847	138
Hickory	445	--	--	1,000	178	--	--
Basswood	1,240	149	12	5,958	1,063	171	28
Beech	--	--	--	--	--	--	--
Yellow birch	6	--	--	5	1	--	--
Hard maple	2,047	313	24	6,752	1,125	132	19
Soft maple	1,245	341	24	2,773	492	75	12
Elm	9,459	406	28	3,981	709	136	21
Ash	976	121	7	1,726	303	57	8
Cottonwood	140	26	2	421	74	49	8
Balsam poplar	14	--	--	81	14	--	--
Bigtooth aspen	1,517	303	21	2,006	348	1	[4]
Quaking aspen	1,030	206	15	1,361	236	--	--
Paper birch	423	206	16	256	42	--	--
Black walnut	187	--	--	484	83	--	--
Other hardwoods[5]	1,676	44	2	665	119	--	--
Total	46,278	4,094	307	108,379	18,957	3,566	574
All species	49,918	24,610	1,922	112,381	19,639	3,566	574

(Table 62 continued on next page)

[1] Includes particleboard and waferboard bolts.

[2] 128 cubic feet; includes wood, bark, and air space.

[3] International 1/4-inch rule.

[4] Less than 500 cubic feet.

[5] Includes butternut and black cherry.

(Table 62 continued)

Species group	Fuelwood		Posts		Poles		Other products
	Standard cords [2]	Thousand cubic feet	Thousand pieces	Thousand cubic feet	Pieces	Thousand cubic feet	Thousand cubic feet
Softwoods							
Jack pine	795	56	--	--	--	--	--
Red pine	732	52	1,104	1,134	--	--	--
White pine	1,307	92	--	--	--	--	--
White spruce	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--
Balsam fir	135	9	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--
Total	2,969	209	1,104	1,134	--	--	--
Hardwoods							
White oak	41,634	2,910	213	212	--	--	107
Select red oak	77,772	5,441	6	6	--	--	--
Other red oak	34,174	2,391	2	2	--	--	--
Hickory	3,800	267	--	--	--	--	--
Basswood	1,978	137	--	--	--	--	--
Beech	--	--	--	--	--	--	--
Yellow birch	89	5	--	--	--	--	--
Hard maple	12,565	879	--	--	--	--	--
Soft maple	8,620	603	--	--	--	--	114
Elm	124,334	8,701	--	--	--	--	--
Ash	9,425	658	--	--	--	--	--
Cottonwood	834	56	--	--	--	--	--
Balsam poplar	--	--	--	--	--	--	--
Bigtooth aspen	11,563	809	87	88	--	--	251
Quaking aspen	7,847	549	59	59	--	--	171
Paper birch	4,789	333	--	--	--	--	32
Black walnut	1,489	104	--	--	--	--	--
Other hardwoods [5]	21,421	1,495	--	--	--	--	60
Total	362,334	25,338	367	367	--	--	735
All species	365,303	25,547	1,471	1,501	--	--	735

[2] 128 cubic feet; includes wood, bark, and air space.

[5] Includes butternut and black cherry.

Table 63.--Volume of primary plant residue by use and type of residue, Southwest Unit, Wisconsin, 1981

(In thousand cubic feet)

Use	Wood residue						Bark [3]	
	Total		Coarse [1]		Fine [2]			
	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods	Softwoods	Hardwoods
Fiber products [4]	21.4	2,757.0	21.4	2,508.7	--	248.3	1.0	142.7
Charcoal	--	75.6	--	75.6	--	--	--	48.8
Industrial fuel	31.8	1,856.7	28.2	857.6	3.6	999.1	32.9	1,789.9
Domestic fuel	141.1	1,861.8	139.1	1,856.2	2.0	5.6	17.3	511.2
Miscellaneous [5]	105.2	2,264.4	0.2	283.9	105.0	1,980.5	16.5	1,182.6
Not used [6]	0.9	92.2	0.6	14.9	0.3	77.3	54.7	90.7
Total	300.4	8,907.7	189.5	5,596.9	110.9	3,310.8	122.4	3,765.9

[1] Suitable for chipping such as slabs, edgings, veneer cores, etc.

[2] Not suitable for chipping such as sawdust, veneer clippings, etc.

[3] Does not include bark disposal at pulpmills.

[4] For manufacture of pulp, hardboard, or roofing felt.

[5] Livestock bedding, mulch, small dimension, and specialty items.

[6] Includes residue burned as waste.

Table 64.--All live tree biomass on commercial forest land by species group and forest type, Southwest Unit, Wisconsin, 1983

(In green tons)

Species group	All types	Forest type						
		Jack pine	Red pine	White pine	Balsam fir	White spruce	Black spruce	Northern white-cedar
Softwoods								
Jack pine	520,177	416,504	71,771	--	--	--	--	--
Red pine	2,865,422	43,937	2,435,019	--	--	--	--	--
White pine	744,871	39,579	68,698	284,604	--	--	--	--
White spruce	41,524	--	41,524	--	--	--	--	--
Black spruce	26,523	--	26,523	--	--	--	--	--
Balsam fir	7,715	--	7,715	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	153,209	--	3,606	--	--	--	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	4,359,441	500,020	2,654,856	284,604	--	--	--	--
Hardwoods								
White oak	24,559,472	--	--	--	--	--	--	--
Select red oak	28,430,820	--	83,358	--	--	--	--	--
Other red oak	16,007,682	197,211	141,958	--	--	--	--	--
Select hickory	5,656,922	--	--	--	--	--	--	--
Other hickory	3,177,805	--	--	--	--	--	--	--
Basswood	7,240,955	--	--	--	--	--	--	--
Beech	--	--	--	--	--	--	--	--
Yellow birch	81,231	--	--	--	--	--	--	--
Hard maple	8,702,477	--	--	--	--	--	--	--
Soft maple	5,919,874	--	--	6,289	--	--	--	--
Elm	7,000,204	15,595	--	--	--	--	--	--
Black ash	844,652	--	--	--	--	--	--	--
White & green ash	2,611,359	--	--	--	--	--	--	--
Cottonwood	972,010	--	--	19,235	--	--	--	--
Willow	586,467	--	--	--	--	--	--	--
Hackberry	125,287	--	--	--	--	--	--	--
Balsam poplar	58,140	--	--	--	--	--	--	--
Bigtooth aspen	4,038,565	--	--	--	--	--	--	--
Quaking aspen	4,185,978	13,938	100,200	--	--	--	--	--
Paper birch	5,675,265	--	1,593	--	--	--	--	--
River birch	388,485	--	--	--	--	--	--	--
Black cherry	3,745,657	--	11,064	--	--	--	--	--
Black walnut	1,020,873	--	--	--	--	--	--	--
Butternut	2,051,221	--	--	--	--	--	--	--
Other hardwoods	1,842,965	--	180,428	--	--	--	--	--
Noncommercial species	3,423,765	--	--	--	--	--	--	--
Total	138,348,131	226,744	518,601	25,524	--	--	--	--
All species	142,707,572	726,764	3,173,457	310,128	--	--	--	--

(Table 64 continued on next page)

(Table 64 continued)

Species group	Forest type							
	Tamarack	Oak-hickory	Elm-ash-soft maple	Maple-birch	Aspen	Paper birch	Exotics	Nonstocked
Softwoods								
Jack pine	--	31,902	--	--	--	--	--	--
Red pine	--	357,868	--	28,598	--	--	--	--
White pine	--	113,842	--	216,780	2,705	--	--	18,663
White spruce	--	--	--	--	--	--	--	--
Black spruce	--	--	--	--	--	--	--	--
Balsam fir	--	--	--	--	--	--	--	--
Hemlock	--	--	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--	--	--
Eastern redcedar	--	62,761	--	78,938	2,792	5,112	--	--
Northern white-cedar	--	--	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--	--	--
Total	--	566,373	--	324,316	5,497	5,112	--	18,663
Hardwoods								
White oak	--	20,919,132	325,157	2,449,968	379,469	278,814	--	206,932
Select red oak	--	23,703,289	--	3,452,473	322,693	699,782	--	169,225
Other red oak	--	14,278,842	108,991	614,856	215,483	41,937	--	408,404
Select hickory	--	4,677,483	2,461	702,678	8,222	239,702	--	26,376
Other hickory	--	2,003,766	40,641	1,033,759	86,526	--	--	13,113
Basswood	--	2,815,868	48,698	4,244,160	86,809	22,894	--	22,526
Beech	--	--	--	--	--	--	--	--
Yellow birch	--	12,424	--	54,766	14,041	--	--	--
Hard maple	--	1,680,228	--	6,915,472	33,038	46,024	--	27,715
Soft maple	--	1,301,310	3,132,836	1,420,534	11,092	38,674	--	9,139
Elm	--	2,611,396	796,593	3,184,878	196,725	149,567	--	45,450
Black ash	--	157,859	518,746	166,537	1,510	--	--	--
White & green ash	--	620,967	556,259	1,303,710	122,242	--	--	8,181
Cottonwood	--	256,782	367,356	184,604	144,033	--	--	--
Willow	--	19,617	394,180	9,290	50,044	--	--	113,336
Hackberry	--	29,407	40,268	55,612	--	--	--	--
Balsam poplar	--	39,502	--	2,842	--	15,796	--	--
Bigtooth aspen	--	2,445,737	13,868	560,615	792,155	226,190	--	--
Quaking aspen	--	1,550,288	--	547,855	1,782,192	179,121	--	12,384
Paper birch	--	2,741,607	93,230	578,017	295,773	1,965,045	--	--
River birch	--	52,570	335,915	--	--	--	--	--
Black cherry	--	2,211,046	13,903	1,352,996	57,497	74,837	--	24,314
Black walnut	--	754,226	--	232,011	--	--	--	34,636
Butternut	--	1,156,107	30,597	809,759	15,358	--	--	39,400
Other hardwoods	--	630,090	500,810	372,202	88,313	45,120	--	26,002
Noncommercial species	--	2,007,294	30,361	1,299,373	29,904	52,709	--	4,124
Total	--	88,676,837	7,350,870	31,548,967	4,733,119	4,076,212	--	1,191,257
All species	--	89,243,210	7,350,870	31,873,283	4,738,616	4,081,324	--	1,209,920

Table 65.--All live tree biomass by species group and tree biomass component, Southwest Unit, Wisconsin, 1983

(In green tons)

Species group	All components	Biomass component				
		All live 1- to 5-inch trees	Growing stock		Cull	
			Boles	Tops and limbs	Boles	Tops and limbs
Softwoods						
Jack pine	520,177	66,916	223,787	95,745	93,642	40,087
Red pine	2,865,422	214,153	1,834,164	788,509	19,991	8,605
White pine	744,871	222,370	350,164	149,218	18,068	5,051
White spruce	41,524	31,673	6,989	2,862	--	--
Black spruce	26,523	--	18,686	7,837	--	--
Balsam fir	7,715	--	5,423	2,292	--	--
Hemlock	--	--	--	--	--	--
Tamarack	--	--	--	--	--	--
Eastern redcedar	153,209	27,592	28,419	11,538	74,215	11,445
Northern white-cedar	--	--	--	--	--	--
Other softwoods	--	--	--	--	--	--
Total	4,359,441	562,704	2,467,632	1,058,001	205,916	65,188
Hardwoods						
White oak	24,559,472	611,167	11,402,621	4,752,393	5,557,380	2,235,911
Select red oak	28,430,820	403,281	15,854,701	6,756,767	3,821,310	1,594,761
Other red oak	16,007,682	221,275	7,137,276	3,017,199	3,978,569	1,653,363
Select hickory	5,656,922	415,764	3,018,411	1,276,569	672,043	274,135
Other hickory	3,177,805	570,219	1,641,070	696,462	206,704	63,350
Basswood	7,240,955	501,012	3,618,829	1,537,650	1,132,372	451,092
Beech	--	--	--	--	--	--
Yellow birch	81,231	--	48,518	20,289	8,721	3,703
Hard maple	8,702,477	415,593	4,175,573	1,779,182	1,640,852	691,277
Soft maple	5,919,874	570,686	2,806,205	1,199,092	954,335	389,556
Elm	7,000,204	771,413	3,199,818	1,326,108	1,214,702	488,163
Black ash	844,652	97,594	460,619	192,795	66,130	27,514
White & green ash	2,611,359	237,768	1,402,008	597,478	269,971	104,134
Cottonwood	972,010	4,840	629,184	266,032	50,977	20,977
Willow	586,467	31,765	241,495	100,812	156,418	55,977
Hackberry	125,287	29,624	59,335	24,479	8,422	3,427
Balsam poplar	58,140	2,842	38,502	16,796	--	--
Bigtooth aspen	4,038,565	227,177	2,469,653	1,074,817	185,926	80,992
Quaking aspen	4,185,978	400,344	2,230,923	960,499	421,986	172,226
Paper birch	5,675,265	766,248	2,860,276	1,215,486	591,807	241,448
River birch	388,485	42,610	188,066	79,676	54,599	23,534
Black cherry	3,745,657	355,211	1,673,041	712,983	732,668	271,754
Black walnut	1,020,873	8,580	565,352	240,510	144,766	61,665
Butternut	2,051,221	55,973	751,946	320,931	649,106	273,265
Other hardwoods	1,842,965	335,960	441,683	184,875	632,931	247,516
Noncommercial species	3,423,765	--	--	--	3,079,722	344,043
Total	138,348,131	7,076,946	66,915,105	28,349,880	26,232,417	9,773,783
All species	142,707,572	7,639,650	69,382,737	29,407,881	26,438,333	9,838,971

Table 66.--Sampling errors[1/] for estimates smaller than the Unit totals of volume, net growth, removals, and area of commercial forest land, Southwest Unit, Wisconsin, 1983

Sampling error	Commercial forest land	Growing stock			Sawtimber		
		Inventory	Growth	Removals	Inventory	Growth	Removals
Percent	Thousand acres	- - - -Thousand cubic feet- - - -			- - - -Thousand board feet[2/] - - -		
1	299.1	24,168,264	1,626,313	35,432,994	100,373,122	5,368,599	98,463,036
2	74.8	6,042,066	406,578	8,858,248	25,093,280	1,342,150	24,615,759
3	33.2	2,685,363	180,701	3,936,999	11,152,569	596,511	10,940,337
4	18.7	1,510,517	101,645	2,214,562	6,273,320	335,537	6,153,940
5	12.0	966,731	65,053	1,417,320	4,014,925	214,744	3,938,521
10	3.0	241,683	16,263	354,330	1,003,731	53,686	984,630
15	1.3	107,415	7,228	157,480	446,103	23,860	437,613
20	0.7	60,421	4,066	88,582	250,933	13,421	246,158
25	0.5	38,669	2,602	56,693	160,597	8,590	157,541
50	0.1	9,667	651	14,173	40,149	2,147	39,385
100	0.0	2,417	163	3,543	10,037	537	9,846

[1/] At the 68-percent probability level.

[2/] International 1/4-inch rule.

Table 67.--Sampling errors for county totals of growing-stock volume, net growth, removals, and area of commercial forest land, Southwest Unit, Wisconsin, 1983

(Percent of estimate)

County	Commercial forest land	Growing stock		
		Inventory	Growth	Removals
Buffalo	1.26	10.81	17.66	110.93
Crawford	1.34	12.07	19.67	239.02
Dunn	1.33	11.58	17.61	132.71
Grant	1.27	11.76	18.18	164.39
Iowa	1.48	15.75	23.33	264.08
La Crosse	1.57	13.82	24.00	154.29
Lafayette	2.82	30.41	61.22	1/
Pepin	2.37	24.54	43.84	306.82
Pierce	1.72	17.24	25.95	212.40
Richland	1.37	13.14	21.45	209.01
St. Croix	2.03	20.68	24.76	140.19
Sauk	1.28	11.16	17.31	67.43
Trempealeau	1.43	13.97	20.17	172.84
Vernon	1.22	10.90	18.69	166.97
All counties	0.39	3.65	5.74	39.38

[1/] There were no average annual removals for this county.

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Raile, Gerhard K.
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The timber resource of the Southwest Wisconsin Survey Unit increased 29 percent in commercial forest area and increased 52 percent in growing-stock volume between 1968 and 1983. Highlights and statistics from the fourth inventory of this unit are presented for area, volume, growth, mortality, removals, utilization, and biomass.

KEY WORDS: Statistics, area, volume, growth, mortality, removals.